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ABSTRACT

Presented is the final report of a research project on the programed training and placement of nonpsychotic disturbed adolescents. Eleven chapters cover topics which include the following: psychiatry and the sociopaths and psychopaths; boys dealt with in the project; development of the programed interaction diagnostic interview; disturbances to personality rhythms produced by stress; differential environmental pathologies and therapeutics; behavioral changes associated with interaction therapy; extensions of programed interaction therapy in groups; designing jobs for therapeutic purposes; cultural programing of group interaction in the classroom; significant elements in rehabilitation placement; and elimination of interdisciplinary communication problems. Appended are a paper on computer diagnosis and evaluation in programed interaction therapy, and a manual for observers and interviewers in interaction measurement research. (SBH)

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ADOLESCENT SOCIOPATHS

by

Eliot D. Chapple

This draft represents a terminal progress report for the NIMH-NIP grant, Treatment of Adolescent Primary Behavior Disorders, R20-MH-15166 and the final report for its associated SRS grant, Programmed Training and Placement for Non-Psychotic Disturbed Adolescents, RD - 2298 - P - 68. Though presented in draft form, in fact, this report is intended to be published as a book in the near future, giving due credit both to NIMH and SRS. It is for this reason that the draft is written deliberately to interest a wide variety of readers in the hope that this will facilitate utilization of the research techniques and findings on a broad scale basis. This is particularly necessary because of the serious problems of law and order which sociopaths and psychopaths, both adolescent and adult, create in our society. Therefore, much of the technical material has been subordinated in the interests of effective communication but is available on request to the writer although some has been included, for illustrative purposes, in the appendices. At the end of the bibliography, publications directly or indirectly influenced by these grants are listed.

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To Alfred M. Stanley, M.D. and the late Oscar K. Diamond, M.D., former Directors of Rockland State Hospital, who recognized that these violent and dangerous young people were psychiatrically ill, who accepted their ethical responsibility for them and were willing to support, against much opposition, an innovative program conducted by non-psychiatrists.

To Richard Elwell, M.S., formerly Associate Commissioner of Mental Health in the New York State Department of Mental Hygiene, who enthusiastically backed our program, realizing that major breakthroughs had to be achieved if society is to deal effectively with adolescent and adult sociopaths and psychopaths. That the Center, planned for the development and broad utilization of innovative programs for the personality and character disorders -- delinquents and criminals, addicts and alcoholics -- became the victim of bureaucratic timidities only emphasizes what he tried to manage for our program.

Apart from these individuals whom I have singled out, many others made their contributions in greater or lesser degree; for which, many thanks. It is only fair, also, to highlight what they did do against those, sometimes on the staff, more often outside, for whom any departure from the old, unworkable professional ways, sanctified by generations of failure, was a clear and present danger. All these, one might hope, will gain their just reward but, in this non-theological age, how this will be accomplished is hardly mine to say.

It is essential to point out, however obvious it may appear, that what is contained herein in no way represents the opinions or policies of the New York State Department of Mental Hygiene. As the author, I have the sole responsibility, and what I have to say describes what we did and what we saw, however much others might disagree with our interpretations.

TABLE OF CONTENTS

Chapter 1

Psychiatry, and the Sociopaths and Psychopaths
Territorial Limits of the Psychiatrists
The Dilemma of Psychiatry
Tentative Steps to Therapy
Stability of Sociopathic Personalities

Chapter 2

The Boys We Had to Deal With
The Presenting State

Chapter 3

Development of Interaction Measurement and the
Diagnostic Interview
Essentials of Interaction Measurement
Physiological Properties of Interaction
The Stresses of Interaction
Development of the Programmed Interaction Diagnostic Interview
Control Systems to Maintain Interviewer Reliability

Chapter 4

Interactional Diagnosis
The Basic Rhythms of the Personality
Disturbances to Personality Rhythms Produced by Stress
Identification of the Temperamental Reactions
The Temperamental Disorders

Chapter 5

Differential Environmental Pathologies and Therapeutics
Comparison of Job Fit and Personality
Practical Implications
The Total Interactional Environment
The Hospital As A "Therapeutic" Community

Chapter 6

Programmed Interaction Therapy
Types of Therapeutic Schedules for Specific Disorders
Computer Simulation for Treatment Decision
The Contrast With Behavior Therapy or Behavior Modification
Behavioral Changes Associated with Interaction Therapy

Chapter 7

Interaction Training Group Sessions
Extensions of Programmed Interaction Therapy in Groups
Potentials of Group Sessions
Leadership: The Management of Group or Set Events

Chapter 8

Cultural Programming of Group Interaction Through
the Workshop
Designing Jobs for Therapeutic Purposes
Components of Job Design
Uses and Limitations of Supervisory Stress
Cultural Innovation in Workshop Organization

Chapter 9

Cultural Programming of Group Interaction in the Classroom
The Academic Double-Bind
Variations in Interactional Design

Chapter 10

Community Placement: Criterion of Success?
Ambiguities of the Criterion: Discharge to the Community
Significant Elements in Rehabilitation Placement
The Need for Innovative Development
The Criterion of Successful Therapy-Rehabilitation

Chapter 11

Significance of the Programmed Interaction Therapy-
Rehabilitation System
Building "Professionalism" Into the Computer
Elimination of Interdisciplinary Communication Problems
Ease of Acceptance of the Approach
Epilogue: The Best Laid Plans...

Appendix I

Computer Diagnosis and Evaluation in Programmed
Interaction Therapy

Appendix II

A Manual for Observers and Interviewers in Interaction
Measurement Research

Chapter 1

Psychiatry, and the Sociopaths and Psychopaths

This book is about boys in their teens, who were sent by the courts to Rockland State Hospital from Harlem and the South Bronx, after evaluation at city hospitals (Bellevue and Jacobi) substantiated the judge's opinion that the boy's delinquent and anti-social behavior was due to "psychiatric illness". Other boys, with similar behavior, before other judges, went to reform schools or prisons. Almost all these boys were black or Puerto Rican, but this was a consequence of the population Rockland then served. In other areas, similar boys are white. Girls also were sent to Rockland but, for administrative reasons reinforced by the belief that, for morality's sake, the sexes must be kept separate, we worked with only a very few.

These young people are usually called sociopaths or psychopaths, though the latter term is becoming unfashionable. In psychiatric terminology, they are referred to as having personality or character disorders, but character is no longer regarded as relevant to present day society or to psychiatry. Whatever the labels used, these young people present the same kinds of patterns of behavior that we see in adults -- in the criminals, the alcoholics, narcotic addicts, sex deviates. Psychiatrists fall into the same confusion about such dangerous individuals as do the courts and the legislatures: they waver between admitting they are psychiatrically ill (but untreatable by their present methods) or legally "responsible" violators of the law, and hence to be committed to correctional institutions. In the official nomenclature, the type of delinquent or criminal act is sometimes used as "diagnosis"; at other points in the labelling, the kind of behavior, crudely summarized, is sometimes called a reaction, a trait, a disturbance, a state.....

Most psychiatrists are properly unhappy with this classification, but not to the point of abandoning it.¹ With children and adolescents, almost all admit its imperfections; those who work with the young usually ignore it. They do so because the classical symptoms into which the "thoughts" of the patient can be classified are linguistically less developed (or obvious). In any case, they are of no assistance in treatment.² This is also true for the adult, but medical fascination with taxonomic distinctions ignores the fact that, in most psychiatric cases, the diagnostic label is almost irrelevant for prescribing treatment.

Territorial Limits of the Psychiatrists

But this adherence to a diagnostic fashion, based on interpreting the words the patient uses as reliable indicators of "thought

processes", has another and more serious consequence. So much attention is paid to those verbal statements or expressive movements which are supposedly evidence of "mental" disorders that the psychiatrist typically regards only the patient who hallucinates, who has what can be called "delusions", etc., as ill (psychotic). This is popularly (and professionally) often considered as the evidence for insanity, of being "out of one's mind". The courts, concerned with the question of the patient's mental processes, of whether he can distinguish between right and wrong, accept, almost universally, under McNaghton's rule, the dictum that if he is "insane" in this sense, and this sense only, he cannot be held criminally liable due to psychiatric illness.³ But the sociopath and psychopath do not have thinking disturbances in this sense. They have uncontrollable reactions but, at the intellectual level, they are aware that setting the fire, raping the five year old, falling into a drunken rage, stealing, committing a murder are "wrong". Since the psychiatrists are unwilling to accept their own official definitions of psychiatric illness, preferring to take refuge in presence or absence of hallucinations or delusions, no wonder most sociopaths and psychopaths, even when very young, start on the long (or short) road to prison.

If there weren't so many of them, by comparison to the psychotics, this might not be considered serious even though these are the individuals who are primarily dangerous to themselves and to society and, under the law, committable. But of every 10 individuals who can be classified as psychiatrically ill, 9 have personality disorders.⁴ Look at the estimated figures. Eight million severe or chronic alcoholics,⁵ perhaps half a million narcotic addicts,⁶ though this figure is almost impossible to estimate; the delinquent and criminal -- certainly many millions -- but existing methods of collecting statistics are unreliable and there are major differences from one jurisdiction to another in enforcement.⁷ Still, the latest figures show that over 50% of all major crimes are committed by those 19 or younger.⁸ It is extremely rare that crimes are committed by non-sociopaths. I exclude organized crime which, in numbers, is proportionately small, and whose employees are rarely caught.

Psychiatrists admit that they are unable to treat the sociopaths. Most refuse to take them on as patients. They are dangerous, violent, uncooperative, hostile, unreliable -- in short, unpleasant customers.^{9,10} In most states, psychiatrists in charge of mental hospitals will not admit them to the hospital. "Appropriate treatment is unavailable," "facilities are too crowded," there is a shortage of the "right kind" of personnel -- all mental hygiene laws provide ways of avoiding such commitments. No wonder the detention centers are crowded, the prisons full, and law and order disintegrating under the sheer mass of sociopathic behavior.

The present enthusiasm for abolishing state hospitals and putting all available mental health financing into community mental health centers makes the situation far worse.¹¹ It is based on

the assumption that the only persons psychiatrically ill are the psychotics who, through drugs, can often be treated and returned home, though 50% of all new admissions in state hospitals are returnees.¹² But the sociopath, the alcoholic, the narcotic addict very rarely will accept any kind of treatment. He believes his antisocial actions are entirely justified; he has a whole repertoire of rationalizations to use to avoid the attempts of courts, probation departments, or families to get him to reform. Only in the case of the occasional alcoholic fallen to skid row state or where the addict becomes too pressed by his frantic need to finance the habit, finding it harder and harder to get a "high", do we find temporary usage of such centers. For the few who do, it is only to alleviate the immediate stress and facilitate a return to the old pattern of sociopathic existence.¹³

So money for research or for demonstration programs is hard to come by. In our case, however, the historical accident that Rockland was the largest residential treatment center in the world for young sociopaths made it imperative to find support (from NIMH through a Hospital Improvement Grant) and try to do something about the problems which these young people caused within the hospital. When our program began, the Social and Rehabilitation Service (formerly the Vocational Rehabilitation Administration) combined forces with NIMH, playing an important part in making the research program to be described a reality. It is ironic, however, that the New York State Department of Mental Hygiene radically changed its ideas about what should be done with its hospitals and eliminated admissions to Rockland from New York City. The present Director has cut the Gordian knot and no longer admits adolescent character disorders to his hospital, even from his new catchment area thus solving his problem if not the legal and ethical one. In New York City, of course, Rockland had been the primary resource. But now!

The Dilemma of Psychiatry

Before beginning the account of what we did and how it worked out during the life of the program, it might be useful to consider some of the myths about the sociopaths and psychopaths which beleaguer psychiatry, and also what is now known about them. Psychiatrists have always carried out both diagnosis and therapy by making interpretations about what the patient thought and felt from what he said. In recent years, some awareness has spread that communication is not confined to verbal statements, that attention should also be paid to the non-verbal responses -- expressive movements -- of the patient.¹⁴ Yet in both cases, the same interpretative method has been used. Both words and gestures (and bodily positions generally) are regarded as symbols (and symptoms) of these "internal" states.

Now the problem to which philosophers, logicians and linguists have been devoting themselves for centuries is how to develop a rigorous method for establishing exactly what a symbol refers to in the experience, present or past, of an individual and, more generally, within any particular context.¹⁵ In this they have been joined by the anthropologists who, typically, work with people of a very different culture and language with which they are ordinarily unfamiliar.¹⁶ They have become well aware of the treacherous properties of translators or interpreters in their field studies. This is not the place to discuss the present state of theories of symbolism other than to say that the semantic process is extremely difficult to carry out, that meanings vary from one person to the next and, for one person, at one time in his life to another, in amazing complexity.¹⁷

Psychiatrists, on the other hand, approach the problem from the vantage point of medicine. There it is often possible to place some reliance on how the patient describes his pain and the contexts in which it had occurred; with increasing sophistication in laboratory methods, these statements can often be verified. This was the background for the Kraepelin classification of symptoms into constellations (syndromes) which hopefully might be used to differentiate disorders, but not their treatment, although it was found (but rarely accepted) that these had very little consistency from individual to individual.

When Freud and his followers began to exert a significant influence on psychiatry, much of their impact was derived from Freud's assumption that symbols had the same meanings across the world, no matter how different the cultures. His real contribution was to encourage the investigation of the dynamic factors which affected the relations of individuals to one another, particularly in the family, though in a European context. Still the highly elaborated interpretations of what patients said, and the extensive studies of the writings of famous men, combined to suggest (as he maintained) that the interpretative process could be used with confidence from one individual to another within a culture, across cultures and across centuries.

This meant that the psychiatrist could (and did) take the interpretation of symbols for granted, as self-evident and self-explanatory. No matter what school he followed, since he relied on verbal and non-verbal material, he expected to be able to deal with the patient within a communication process. This tendency has been remarkably reinforced by the development of "tests" by clinical psychologists. Child psychiatrists, particularly those working with small children, quickly found that the techniques of interviewing and psychotherapy which were being formalized for adults produced very little in the way of symbolic statements. Hence the development of various procedures -- setting up furniture, getting the child to draw or model with clay -- which appeared more useful.¹⁸

As psychiatrists turned to patients outside their own cultural and economic milieu, they found that linguistic material no longer was easily available. The cultures of the people in ghetto areas were very different, particularly where they come from other societies; the classic (or modified) methods of whatever psychotherapeutic school they adhered to didn't work.¹⁹ With a middle or upper class sociopath, there were still serious problems since the patient used language against the therapist as a weapon;²⁰ therapy (with countertransference quickly operative for most therapists) would be brought to an abrupt end. With the misnamed lower class sociopath (Class V as the fashion is), hostility was immediately elicited. The reaction pattern was short and violent, ending the therapeutic attempt.²¹

As a consequence, psychiatrists are almost (not entirely) unanimous about the inappropriateness of sociopaths and psychopaths for psychiatric treatment, meaning, of course, that this particular type of role-playing by the psychiatrist doesn't work. To argue from this that they are untreatable is to assume that "psychotherapy", as they practice it, is the only method available, and that it is adequately standardized. As we shall see, this is not the case.

Tentative Steps to Therapy

The situation would have been somewhat improved if the new ubiquitous psychoactive drugs were at all effective. Some have argued for an epileptoid equivalence and tried drugs which have some value in epilepsy.²² In children, the hyperactive child has been shown to be the beginning stage to sociopathy and alcoholism in the adult.²³ Parents of hyperactive children, commonly sociopaths, turn out, in preliminary studies, to have been hyperactive themselves when young. The conclusion is reinforced from other research that sociopathy is a family disease. It may be a function of the close environment and its stresses and perhaps it has genetic components.²⁴ Criteria are still inadequate for accurate discrimination, but it is well known that amphetamines are extremely effective for some so diagnosed.²⁵ But since most psychiatrists give some form of psychotherapy their primary commitment, only a major revolution in psychopharmacology can make this choice of procedure tenable.

It is popularly believed among psychiatrists that the only hope for utilizing psychotherapy with the sociopaths is in what is called group psychotherapy.²⁶ More recently, this has included confrontation therapy, a variant on the group idea.²⁷ Since sociopaths are characterized by the frequency and violence of their acting out, putting a group of them together with members of the staff is sure to produce fireworks. It is less certain what results it achieves. The enthusiasm for confrontation therapy

stems from its initial use in Alcoholics Anonymous where the skid row derelict is forced to accept that he is a drunk and hopeless, and all his rationalizations are shot down by those few whom AA has reformed.²⁸ The idea has been taken up in Synanon, an equivalent but more violent process for narcotic addicts, except that the organization provides a total work and living environment for its converts from which few ever return to society.²⁹ Another influence in spreading the popularity of confrontation derives from the stormy days of Black Power and telling "whitey", "like it is", a scene, particularly on college campuses, which heightened its acceptance among the "emancipated" (and "masochistic") whiteys who were on the receiving end. Quaintly enough, a similar pattern, T-groups, has been long in use by social psychologists, for making over the upwardly mobile business executive.³⁰ It too has spread to psychiatry with other variants like the "therapeutic community" of Maxwell Jones.³¹

It is enough to list these assorted varieties and to emphasize that, however much they satisfy the participants at the time by permitting acting out, there is no evidence that they have any scientific validity.³² In other words, no significant changes are brought about in the individual's behavior after the fact. There is no carryover to real life. And the reason is fairly obvious. No matter what kinds of patients or staff members make up the therapeutic situation, people differ enormously in their capacity to take it or dish it out. Very often, serious damage can be done to an individual for whom such enthusiastic (and hostile) acting out is contraindicated.

Fischer and Weinstein³³ have commented on their own and others' experience with these fashions in psychotherapy and the debilitating effects they have on patients, on the staff and on the ultimate hope of improving the scientific level of psychiatry. Granted that some kind of group therapy has the attraction of reducing the costs per treatment; still it should be noted that the psychiatrist himself, usually only comfortable in a two person situation, soon abdicates responsibility for conducting such sessions to the more worldly non-professionals on his staff. To assume that any one of these procedures is not constantly varied by the happenstance of the personalities participating, to believe that some form of confrontation is beneficial per se, is to ignore our knowledge of what can be done with humans who are emotionally disturbed. Consider what a careful examination of rituals performed by shamans for the sick in non-European societies can actually achieve. These rituals are stylized, even programmed, from centuries of repetition. Though there are some differences in execution consequent on differences in the personality of one shaman from others, the similarities in the rituals as they are performed are far greater than their idiosyncratic differences.³⁴ Such a conclusion cannot be made from an examination (and recording) of what passes either for individual or group psychotherapy today.

Stability of Sociopathic Personalities

Although it may seem a contradiction in terms to speak of stability in sociopaths, since their violent over-reactions suggest the contrary, the point I want to make is that a child or adolescent who is sociopathic will not get over it as he grows older. There has been a popular fashion among psychoanalysts to talk about "adolescent turmoil" as the explanation for the onset of personality disorders in adolescence. This happy solution to the problem, absolving the psychiatrist from concern, is not supported by any studies of the problem. There ain't no such animal. Adolescent turmoil is preceded by recognizable disorders in the child; as adolescence is left for adulthood, the troubles continue.³⁵ The Gluecks, among others, argue against their own figures that sociopaths "burn out" in later life and achieve respectability.³⁶ Of their 500 delinquents followed up 15 years later, only 16% could be said to have "reformed" and, in most instances, such persons, as also seen in the St. Louis study now to be commented on, clearly had attained only a precarious adjustment.

Though a number of follow-up studies have been conducted, perhaps the most decisive is Lee Robins' book, Deviant Children Grow Up. It describes children seen at the St. Louis Municipal Clinic who were located, 524 of them, 30 years later, by persistent and incredible detective work.³⁷ Eighty-eight per cent of those categorized as having well-developed patterns of anti-social behavior as children were judged sociopaths as adults; interestingly enough, similar findings hold for their children. The author points out also that professional criminals, at least in those days, never turned up in childhood in child guidance clinics. Careerists in organized crime are not sociopaths (antisocial is the psychiatrist's qualifying phrase) by contrast to those described who make up the bulk of the criminals with whom the law actually deals. Professional criminals working within "the organization" are reasonably well-adjusted, at least to gang and family culture. They are able to operate as organization men, even though their careers require them to commit violent acts.³⁸ They are equivalent to the members of the hereditary criminal castes in India. It is well known that true sociopaths are too unstable and unpredictable (and dangerous) to be employed in organized crime. Such studies as those by Dr. Robins (there are many others which could be cited)³⁹ make clear the unadaptive nature of the behavior of the sociopaths, both as children and in later life.

In describing sociopaths and psychopaths, the traditional psychiatric picture is of an individual "with a basic defect of inability to formulate a concept of time concerning self, the lack of concern with past or future and the concern only with the present. As a consequence the sociopath has no concern for the

consequences of his actions, is unable to profit by experience and has complete lack of consideration for others".⁴⁰ This portrait is considerably overdrawn. Here again the psychiatrist is interpreting the statements, and behaviors, without adequate awareness of how early an apparently impenetrable mask develops. The repetition of anti-social actions soon builds up in the individual a cover-up which becomes increasingly habitual. Rationalizations abound for his lack of control of his violent reactions to others which would otherwise be too revealing, making punishment imminent.

The fact is, many sociopaths are very obviously hostile and aggressive. Others, many of them again, are severely depressed beneath the mask of bravado and violent action which appears on the surface.⁴¹ There are, as we shall see, many types of sociopaths and psychopaths with varying components making up their disorders. These can be related to the particular types of interpersonal stress they are unable to handle and to which they react with violent, and delinquent or criminal, behavior.

To describe them under such psychiatric labels is only to emphasize the unreality of prevailing stereotypes. Sociopaths and psychopaths are not devoid of the bowels of feeling; the sources of their violence can be uncovered no matter how much the history of delinquent and criminal acts may argue otherwise. Treatment, if based on this analysis, can attack the specific patterns of sociopathy with specifically designed forms of remedial action. That this is not done within psychiatry is only because almost all practitioners reject all patients for whom their extremely limited repertoire historically has shown no benefit.⁴² If psychotherapy is to be used, it must be based on what the prospective patient (delinquent or criminal in this case) is observed to do. Its methods of treatment can then be designed to modify these patterns of behaving rather than to try to prop up the shaky foundations of interpretative semantics by hoping for the emergence of a non-interactional linguistic therapy.

Chapter 2

The Boys We Had to Deal With

For many years, Rockland State Hospital was the largest residential center for character disorder children in the world. Children, under New York State law, can be admitted at the age of 5, and when they become 16 are classified as adolescents, a classification which flies in the face of biological knowledge and the realities of puberty (presumably never experienced by those responsible for such regulations). If a boy or girl had reached the 16th birthday, he or she would be admitted on the adult service, a perennial nightmare to psychiatrists in charge of adult buildings since, as sociopaths, they were troublemakers, tormented the chronic adult psychotics and, of course, there was no program for them (or for the adults, for that matter).

More important, the catchment areas for adults, which included adolescents, were different from those for children. At the outset of our program, we discovered that boys who reached 16 and did not live in Rockland's adult catchment area were promptly shipped off to another hospital since they no longer "belonged" to Rockland. Fortunately, the then Director, Dr. Stanley, ruled that all such boys in our project could remain while progress was being made and the boy was being prepared for return to his home, or other arrangements were being made for placement. In reality, no educational programs, even nominal ones, were provided for the "adolescents". At the beginning of 1969, the Legislature passed a bill mandating treatment (and educational) programs for the age group, 16-21, but nothing substantive was done. An earlier bill, (1967) requiring education, contained the phrase, "and who can benefit therefrom". Although it was obvious that the Legislature's intent was to excuse hopeless efforts at educating autistic schizophrenics or the severely brain-damaged retarded, it was easy to justify excluding the hostile, the "unmotivated", and all the others, if anyone asked.

In Rockland's population of approximately 900 children and adolescents, at least 75% were character disorder patients, roughly 15% childhood schizophrenic (or autistic), the balance made up of those with organic brain damage, severe epilepsy, etc. Rockland County, where the hospital is located, had a population of slightly over 100,000 in 1966, though today it has doubled, and the young people admitted came from Upper Manhattan, largely Harlem, and from the Bronx. Though there are some middle-class areas, largely containing people of Jewish origin in the Northern Bronx, the high population density and extreme poverty areas are in the southern part of the County, what is sometimes referred to as the South Bronx though, more properly, it should be called the Southern Bronx, since the South Bronx is one area, along with Morrisania, Mott Haven, Hunt's Point, which go to make it up.

Our population, at least those who had reached physiological adolescence (and we tried to concentrate on the older ages with our limited resources, beginning at 14), were primarily blacks and Puerto Ricans, approximately 56% black, 31% Puerto Rican (a proportion that was increasing), with only about 11% white, largely Italians and Irish. About 1% of the young people came from Rockland County. Puerto Ricans are a more mobile group as is well known, with much travel back and forth to the Island. Hence there was a built-in lack of stability in their proportional representation in the total patient load, varying as a function of economic conditions both at home and in New York City. What this meant to us concretely was that boys might be released to return to Puerto Rico with parent or relative and thus we had no way of following them up.

To obtain case history information on these boys, we were limited to what had been obtained by the hospital staff, supplemented by statements transmitted from the original admitting hospital, usually Bellevue in Manhattan and Jacobi in the Bronx. To those who have never looked at such records, the lack of precise statements, the absence of any systematic chronology, the confusion from one page of the history or anamnesis to the next, even on what would appear to be the most easily obtainable data, like number of siblings in the house or total number and ages of all siblings, etc., is unbelievable. As for a record of the events in the young person's life which evidenced the sociopathic state, these were kaleidoscoped, skipped over, omitted, in a highly random fashion. One can appreciate the difficulties which psychiatrists and social workers faced in trying to get salient information, since no systematic longitudinal procedure is or was employed here, or in most other hospitals. We have had to do the best we could with what we had.

We had originally intended to take new histories following a systematic plan, establishing the chronology of the events in all the various areas of the boy's life so that we could see whether a crisis at school followed or preceded a crisis at home, for example. We also designed a data sheet for relationship and activity information which we first hoped we would be able to sift out of the case history records, but then decided, after realizing their weaknesses, that it could only be obtained by our social workers. They, however, were unaccustomed to systematic approaches, and so we have had to rely on what we could get out of the hospital records.

The findings are no different from those that other investigators have obtained in working with similar populations.¹ They merely indicate that each boy had a constellation of delinquent (or deviant) behaviors sufficient in variety so that our lack of data on how often, how long, etc., was hardly needed to give them the accepted label of sociopath (or psychopath). Only 2% had "intact" homes; the other 98% were from broken homes, often repeatedly "broken". 51% had run away from home one or more times for substantial periods, while 66% were chronic truants

from school (hardly surprising). As for criminal or delinquent activities, 80% had been involved in assault, while 24%, not always the same persons, had committed assault while armed. There was also a group of 13% whose assaults involved sexual aggression. In addition, 17% engaged in homosexual activities, often serving as male prostitutes.

Though theft and arson percentages always understate the reality since they are only established when a boy is caught in the act, 43% had committed one or more thefts and 30% had indulged in arson. Another 16% had destroyed property, but without the aid of fire. 38% had used drugs sufficiently for this to be a repeated theme. However, the truly addicted, i.e., those using heroin, are excluded, since they would not be admitted to the hospital.

The most interesting finding of all is that 22% of the boys had actually tried to commit suicide. This is not surprising to those of us who have satisfied ourselves through direct experience that the affect-less psychopath is a mythical character, a creation of middle-class psychiatrists who mistake sustained hostility and aggression, or the blatant "theatrical" performance of absence of guilt, as confirmation of their hypothesis.² I do not mean that these patients merely talked about their suicidal intentions. They actually were detected in the act. Many, also, (22%) most of whom neither used drugs or tried to commit suicide were reported to have acted "strangely", to have behaved in a "bizarre manner". Though rarely defined, such phrases, no doubt, helped the diagnostic consciences of the transmitting hospital whose personnel almost universally labelled the boys before transfer to Rockland as schizophrenic.

I suspect they did so in the belief that this would make it harder for Rockland to refuse them admittance; perhaps, more charitably, they regarded the "bizarre" behavior, drug usage, arson and broken homes as appropriate diagnostic criteria for schizophrenia in the young. How they managed to repress their awareness of the suicidal attempt is an interesting though unsolvable question! This, of course, would have shifted the diagnosis to "depression". In any case, on admission to Rockland, the diagnosis was ordinarily changed to "primary behavior disorder", an old New York State label for youthful (under 16) character disorders. Some with obvious difficulties in initiating interaction and with long latencies of response might be left as schizophrenics, which we modified to "integrated schizophrenics", thus showing our broad-mindedness about these diagnostic categories.

It should be emphasized that the figures given above are merely indicative of the kinds of background and the anti-social activities in which these sociopaths indulged. As I have said elsewhere, these boys are the antisocial sociopaths, the solitary loners of the severe character disorders. There is a term, dysocial

sociopaths, applied to those individuals who indulge in violent behavior within a highly structured street gang situation. But this is socialized violence, so to speak, the "rumbles" for possession of "turf". Such dyssocial individuals are usually amenable to the efforts of the street workers which most cities now employ, trying to shift the gang to less lethal forms of solidarity.³ Our boys do not know the meaning of solidarity in that sense. Whatever contacts they might have with street gangs are purely on the periphery.

In addition, because of all the defects in the essential chronological account of their life histories, the percentages I have quoted are minimal. They only reflect what was ascertained by unsystematic inquiry on the part of the various psychiatrists and social workers with whom they came into contact. Omissions in salient facts were endemic. One could see the history taker on the trail of a "symptom", pursuing it like a truffle dog, indifferent to the fact that these expressions of attitudes or feelings or whatever were so vague as to be meaningless, except in a world which ignores the reality of actions for the fantasies of the symbolic and hypostatic.

The Presenting State

It is important to realize how central to living and our program was the adolescent ward. It structured the total universe of the children's (and adolescent) services, if such they could be called. When we began the formal program in the latter part of 1966 (we had worked with some boys before this), we had available a full ward of 25 boys in a building designated for older boys. Most of these were between the ages of 14 and 16 years. They had been transferred from the admitting building where the younger boys were housed, either because they had been hospitalized for a long time and should move with their age grade into a ward with boys of their own age or, after a stay of a few months in the admitting building without evidence of improvement, they were transferred because they continued to be difficult, hard to handle, continually acting out. In other words, the implicit (but not explicit) theory was that admission to the admitting unit might be followed by a reduction of the severe behaviors initially presented and hence to discharge. If this did not happen, they had to be shifted to buildings for the more disturbed.

In general, the boys taken onto the programmed interaction therapy ward (towards the end, expanded to two wards, each with 25 boys) were long term residents of the hospital. Stays of 5 to 7 years were not unusual. Many, of course, had prior hospitalizations, apart from the time spent in the New York City hospitals like Bellevue from which they had been transferred or had been in various agency "homes" or "schools" like Wiltwyck, etc.

Case summaries are the bane of the psychiatric literature, concealing in brief ambiguous statements the realities of the individual and his world. Still, if taken as mere vignettes, putting the individual into some kind of comparative context, they may be useful in suggesting what the boys were like. Repeatedly, the themes of early deprivation, violence, and hard to believe interventions by the "authorities" predominate. What we don't know is how many siblings (or half-siblings) made it, and why. What we do find, however, is repeated statements about psychiatric illnesses, and hospitalization, in what suggest themselves to be all the members of single siblingships.

R.E., a Puerto Rican boy, was transferred to the program at 14. He was depressed and incoherent, stated that he was hallucinating, hearing his mother's voice and was involved with drugs.

His history is singularly confused. He was born in Puerto Rico or New York City and, according to statements in the history, his mother died of suicide when he was one month old or, alternatively, was murdered when he was 5. She was a prostitute and his grandmother with whom he lived claimed that she was mentally ill. The father deserted her when she was two months pregnant and, for what it is worth, the grandmother stated he too was mentally ill. R. has at least two brothers living in Puerto Rico and one sister, several years older, who is a patient at Pilgrim State Hospital. His uncle, who also lived with the grandmother, was killed when he was in the 5th grade by the police when trying to rob the neighborhood bodega.

After he had become involved in drug offenses, the grandmother had him arrested because "she was afraid for his life". After a brief stay in Youth House, he was transferred to Rockland.

K.V., a black boy, came to the project when he was 15. He had been removed from his home on a Child Neglect Petition, with his brothers, and was placed in Children's Village, where he was described as "impulsive, suspicious, hallucinating, with constant nightmares and rocking of his body". He was referred to Bellevue and diagnosed as "autistic, hyperactive, hallucinating, with suicidal tendencies", and then was sent to Rockland.

His mother had her first out-of-wedlock child when she was 12 and, through three different men, had a total of five children. K's father abused the mother and children, threw knives at K, and was sent to jail. After one long prison term, he did not return.

E.B., an Irish boy, along with his four younger siblings, was deserted by his parents when he was 10. He was placed in a Catholic boarding home, but after two months was sent to a foster home where one of his brothers was living. This lasted only 5 months, with constant fighting and attacks on other children. He was then sent to Children's Village where he was described as a "striking mixture of deceit, provocation and unreliability, with many efforts to be ingratiating". After announcing that he was going to his mother's funeral, and threatening to kill himself if not believed, he was sent to Bellevue, diagnosed as schizophrenic-manic-depressive (sic) and transferred to Rockland. Several months later, his mother reappeared (having left her husband) to whom he was discharged. Two months later he was readmitted, his mother saying he had "school problems".

The mother was a prostitute, had a criminal record of child abuse and the man with whom she was living, whom he thought was his natural father, served a term in Sing Sing for grand larceny, and was repeatedly hospitalized at Pilgrim State Hospital with a diagnosis of Psychosis due to Convulsive Disorder, Epileptic Clouded State. He was an alcoholic in addition and physically abused both wife and children.

B.R., a highly hostile, black boy, about 16, came from a family where all its members drank heavily and his mother, the relatively fixed member of the family, was both alcoholic and promiscuous.

B. was restless and hard to manage as an infant, easily irritated, constantly fighting, even at 3 years of age. He was assaultive in Kindergarten, taking money away from the other children. After an intermittent period of school and expulsion, and 10 months of treatment at the Metropolitan City Hospital, he was sent first to Youth House and then to Bellevue and diagnosed as schizophrenic with auditory hallucinations. He was sent to Rockland at 13 and transferred to the program at 16.

B.A., another Negro boy, had a long history of violence, with some homosexual acting-out, with sadistic overtones. He was diagnosed as childhood schizophrenia and sent to Rockland.

His history includes having been placed in three successive foster homes, in the last of which he began to steal and cause trouble and frighten the other foster children. After stealing a purse and being brought to Juvenile Court and declared delinquent, he was referred to Children's Village where he was in constant trouble. His mother had five children by various individuals, B being the oldest and, when he was 10, she was admitted to Central Islip State Hospital as Schizophrenic, Paranoid Type, and alcoholic, where she remained for two years. He was sent from Rockland to another home, Lakeside School, but again was violent and was returned to Rockland and then entered the program when he was about 15.

Chapter 3

Development of Interaction Measurement and the Diagnostic Interview

What we have just seen in these brief accounts of a few of the boys with whom we worked should be sufficient to indicate that disorders in their behavior, in their interaction with each other, with members of the staff or their families, are visible, frequent and, ordinarily, violent. Moreover, the entire history, insofar as our information is at all specific, demonstrates that these violent reactions, on their part as well as by those members of the family who are intermittently concerned with them, are the very fabric of their daily life. Not for them the stable interactional relationship with the mother while growing up (with "father" no mere passer-by in the night). Rather than stability, there is a highly volatile, constantly changing and disturbing environment, going the rounds from household to foster parents to agencies to hospitals -- with the erratic interventions of schools, police and welfare agencies increasing the instability.

Thus even if we began at birth and were able to obtain a record of the events in which the boy took part (or to which he was subjected), the interactions making them up are characterized by aggressive or violent acts, by complete withdrawal and rejection; never by intervals of sustained adjustment to any one other person. And on the wards, when the boy comes to the program, the same picture presents itself. Not merely are the interactions liable to be brief, constantly changing from one person to the next, but the triggering off characteristic of the reaction patterns is continually displayed. So violent are the reactions that one cannot take refuge in the saying that "boys will be boys" or that adolescents like to "raise Hell". The violence is random, set off by apparently tiny forces, hard to establish by questioning by staff members after the fact. Words cannot keep up with what is happening.

Essentials of Interaction Measurement

But interaction measurement routinely records time intervals down to a quarter of a second (and shorter intervals if desired). The only limitation, if human observers are used, is the sustained reaction times of which humans are reliably capable (.25 to .10 seconds). Longer intervals like the length of a response or of the entire contact pose no problems. But how do we go about obtaining these measurements? What do they tell us? What do we learn from their use?

At the level of the boy's interactional contacts, we can, of course, measure over the day, and day after day (given the availability of relief observers) when a contact began with a particular person, who started (initiated) it, how long it lasted, and how

long a period elapsed before the next contact began, either with the same individual or with another. On the basis of such observations, reflected in the imperfect information given in the boy's life history or made visible on the ward or if we visit him at home or elsewhere, the stream of events has very different quantitative properties from one boy to another. It is much in contrast to those of boys in more stable and regularized environments. Thus, from such a record alone, we can begin to make more precise what we mean by stability and instability.

Still, it is also obvious that what the boy does within the event, no matter how long it lasts, will vary remarkably from one event to the next, and with one person in contrast to another. At the same time, we note that there are some underlying and repetitive characteristics -- a boy is extremely talkative or aggressive or withdrawn and silent. To begin with, then, we have to ask how interaction is to be measured, before turning to a consideration of what these measurements tell us.

I must start, however, by making clear that measurement, in the sense we use it, is an extremely limited term. It does not include the assignment of numbers to symbols, whether in the sense of answers to questionnaires, to tests yielding the "IQ" or such personality "tests" as the MMPI (or less popular procedures). It does not refer to the results of getting responses for scale purposes (derived from answers to questions) and arranging them, by "scaling", in some ordinal fashion, with numbers assigned to each rank on the scale. Interaction measurements are equivalent to those used in the exact sciences, primarily measurements of time durations (from which frequencies can be obtained).¹

To use such measurements, we have to define the criteria for the actual operation of measuring which means that we have to identify the beginning and ending of whatever it is that we want to measure. In contrast to assigning numbers to symbols, each having highly varied meanings, the units of time we obtain have to be equivalent as they obviously are, i.e., one second, of an action say, equals any other second of action.² Since each unit is equivalent and interchangeable, the numbers are additive and hence can be safely combined arithmetically. Not that people don't add and subtract, multiply and divide the scores they get on tests or rating scales, but this is an illegitimate, though common, process if we accept the operational point of view of the exact sciences.

Now the criteria used to determine the beginnings and endings of actions (and inactions) are the observable contractions and relaxations of those muscle systems which make up the total response pattern of the species, whether we are dealing with grasshoppers, mice, monkeys or men. Contraction marks the beginning; relaxation the end. When someone starts to talk (and talk, of course, includes gestures), the muscles around the mouth contract, we hear the sound produced by the vocal muscles, and these are supplemented ordinarily by movement of eyes and eyebrows, gestures of the hand, and the

the. When the response action ends, sound and gesture stop, the muscles of the face and the head relax. Electromyographic evidence shows that when relaxation occurs, all electrical activity ceases in the muscle system.³ Contraction and relaxation thus become the boundary markers for time measurements. With a watch or event recorder, we can measure how long the action lasts, how much time elapses before he starts in again, and so on throughout the day and night.

Note that we combine both speech and gesture. Disappointing as this may be to those who hope to rely on speech (and tape recording) alone, we do this because even a moment's reflection on those you know will tell you how much individuals differ in the amount of gestural response that accompanies speech. Some are "expressive", using many and continuing gestures, perhaps only with certain people and not with others. In people of other cultures, we often see obvious differences. We are likely to stereotype the "volatile" Italians, the "phlegmatic" Swedes (or Yankees). The truth of the matter is that these are stereotypes, though they have some validity. Still the remarkable differences which turn up even between our own family members should give us pause. Since we are concerned with total interaction, we have to record total response patterns, without getting caught in cultural differences or individual idiosyncracies.

In spite of what is often believed, the differences obtained if we compare the measurement of a total response with only the verbal durations are highly significant. For many, particularly when listening to someone who is a great talker, head nods, smiles, a whole repertoire of gestural actions occur which, if not recorded, would suggest that the speaker held forth without the slightest response from his audience. Others bridge intervals of verbal silence with expressive gestures, maintaining the floor and their essential or established rhythm, in spite of the intervals when words do not come trippingly to the tongue. And though in a society like our own where words have been multiplied almost endlessly through the cultural media, historically and today, and vocabulary takes on an almost independent status, the dynamics of influencing others are built on getting the response or failing to. It is this total pattern with its integral components in the emotional (autonomic nervous system) states of the body which is influenced, not one rather than the other.⁴ As we shall see, the properties of these interaction patterns provide us accurate information about the total response of each of us, internal and external, however much we think they can be hidden.

So there we have the criteria for observation and measurement, for two people or a hundred (if this needed to be done and observational resources were available), simply the beginnings and endings of each action and inaction of each of the persons being observed. Perhaps this seems trivial, to those who ponder the presumed infinite complexity of the human condition. Trivial it is not, nor do we find, from combinations of these movements of

each key on an event recorder, (one key assigned to each person), that we have avoided complexity. What we do find, however, is that there are many variables which can be derived even from a recording of the interaction of two people and that each variable has a single definition which cannot be confused with another, because it is operationally defined.

Physiological Properties of Interaction

The fact that the criteria we use for measurement are the contractions and relaxations of muscle systems should suggest that we are dealing, essentially, with physiological systems. In fact, the muscle patterns which make up the response repertoire of a particular species are called fixed action patterns, a somewhat misleading term since they are modifiable, within limits, through learning.⁵ One cannot alter the sequence in which activation (and relaxation) of muscle systems occurs, but one can change their timing. Thus the fixed action pattern of walking can be varied by changing the temporal values of each element of the sequence and the extent of its excursion. So we learn to dance, to climb, to run.

The use of the term, fixed, was derived from the observation that many of these patterns appeared without environmental mediation; they were genetic in origin and specific to the species involved. More important, however, was the now widely accepted finding that activity, and other biochemical and physiological functions, down to the level of the individual cell, were essentially rhythmic in nature.⁶ The most widely known, since most of us are familiar with airplane travel and the debilitating effects of time changes on the body, is the circadian rhythm, the roughly 24 hour cycle which all body functions follow, from muscular activity, body temperature, the secretion of adrenalin and other hormones, down to the cycles of production of DNA and RNA in the single cell. The significance of the faster rhythms is not so dramatic, yet we are aware of brain wave frequencies, muscle fiber discharges, heart and respiration rates and the like.⁷ Of these, the alternation of activity and inactivity within short periods (not simply between day and night), and their interaction form in actions and inactions, are fundamental.

As I have discussed at length elsewhere, there are several major consequences of these findings.⁸ 1) the interaction rhythm, made up of sequences of actions and inactions (silences), is a spontaneous one, as rhythms necessarily must be, unless some extraneous factor, external or internal, intervenes; 2) each individual's rhythm, operating as a consequence of a genetic substrate, however modified by environmental adaptations imposed on the rhythm as he grows up, is consistent for him; that is, its variation (when other factors do not interfere) will be minimal. This is why the variance across individuals in a species is far greater than within the individual; and 3) these rhythms are controlled by the autonomic nervous system, that complex self-

stabilizing system by which the beating of our hearts is regulated, by which we breathe, by which we act. And most important, apart from maintaining the body in a steady state, it also so operates that it brings about changes through neural and hormonal means, in the rates of these rhythms when stress from the external environment occurs, readying the system for expressing such emotional states as hunger, fear, rage and love.⁹ Though it was once thought that emotional states were somehow divorced from biochemical and physiological processes, it is now known that these complex states, and their muscular (behavioral) expression, do not require the postulate of some non-physiological process.

The Stresses of Interaction

When we begin to measure the interaction going on between two boys, we are, of course, measuring the action-inaction sequence of each. Remembering that each has his own endogenous rhythm, it is easy to see, and evidenced in every contact we observe, not merely of our adolescents, but of ourselves and those with whom we associate, that it is rare that the two rhythms turn out to be complementary. If they were, then the rhythms would be neatly dovetailed (more precisely, be synchronized). While one spoke (and gestured), the other would be silent and non-acting; when he stopped, his partner would begin to act forthwith.

Except in the unusual instance where perfect synchronization was a consequence of the natural matching of the two rhythms, either one or both will have to change their rhythms even to achieve a minimal occurrence of periods of complementarity. With our boys, quite the converse was the case. Interaction was punctuated by extended intervals of asynchrony. They would try to talk and act at the same time, each trying to outlast and dominate the other, like L.W. and J.B., but no sooner would one win and shut the other up than he would be back in again interrupting, often accentuating his actions by violent gestures or shouting. Or as in other cases, with C.S. for example, when he was spoken to, he did not respond, whether it was to another boy or one of the ward attendants. Efforts to get him to respond by repeatedly taking the initiative seemed of no avail, until after a series of such trials, he would begin to act.

In a ward environment, moreover, where there were many boys around, supplemented by a few adults, the interaction shifted from one person to another with amazing speed, but with recurrent asynchrony. In some cases, the lack of adjustment appeared to be so strong that a violent outburst would result or the boy would flounce off to his room and refuse to talk. Simply by observation, it was not always easy to tell whether this was a cumulative effect of repeated instances or whether what one other person did, in that stream of events, was intense enough to pull the trigger. It was clear, however, that by measuring the interaction which went on, one began to get an idea of the kinds of patterns which were

particularly disturbing for each boy and his interactional needs (like being left alone or finding an audience that would listen and respond) which certainly play a significant part when they were cut off.

We could, of course, have carried on such continuous observations on the ward and arrived at a set of interaction measurements which would describe each boy's basic rhythms and his vulnerabilities. That we didn't do so, of course, was due to the fact that for many years we had available a means of short-circuiting such long-term observations by introducing standardized amounts of particular patterns of stress within the framework of an interview.¹⁰ Since this interview is the basic diagnostic tool used in programmed interaction therapy and rehabilitation, its evolution is worth summarizing briefly, following which I shall discuss the diagnostic categories which result and how they were used in our program.

Development of the Programmed Interaction Diagnostic Interview

When I first began to measure interaction in the late 1930's, having worked out criteria by which this might be done -- being convinced of the necessity to leave the uncertain world of symbolic interpretation with which anthropologists had heretofore contented themselves -- I was only concerned with measuring pairs of individuals, usually staff members and colleagues at Harvard, in what we now call free interaction. In almost all cases, they knew each other; they were simply asked to come in and talk. The consequences of this work were extremely important since they made it possible to demonstrate that each individual's interaction pattern as determined from frequency distributions of his actions and silences, was invariant; that is, no matter with whom he talked and whether he did more or less of the talking, he adjusted his duration distributions consistently.¹¹

On the other hand, the method gave little idea of the dynamics of the process, how change in interactional patterns took place. It was for this reason that we began to measure interviews of patients, and normals, conducted by experienced psychiatrists. At the beginning, we were primarily interested in the different patterns manifested by patients with different diagnostic labels.¹² These were highly suggestive as to the potential of interaction measurement as a tool, but it was obvious that there were difficulties which the psychiatrists themselves, all unknowingly, introduced into the interviews. Both psychiatrists were highly trained, both were practicing psychoanalysts and, conceptually, appeared to have little theoretical differences.

As an accident of the war, we were asked to evaluate naval air force cadets to see whether it was possible that psychiatric criteria, supplemented by some physiological measures and interaction measurement, could provide a useful means of predicting

success and failure and thus be used as a technique of selection. What happened with this is another story, but what became obvious was that the administration of a non-directive protocol for the psychiatric interview was remarkably unreliable. Each cadet was interviewed by each psychiatrist, and morning and afternoon choices randomized to avoid (minimize) carry-over effects. What was obvious was that though they used the same words and phrases and what was thought to be the same technique, the measurements on cadet 1 interviewed by one psychiatrist looked very different than when interviewed by the other. And these were consistent and could be expressed neatly in a regression equation for each.¹³

As a consequence, it became evident that reliability between interviewers was a myth. Something needed to be done to remedy it. We had been experimenting with the introduction of fixed intervals of non-response etc., for other reasons and, in the early 40's decided to design an interview with five periods, using non-directive techniques. We began with a 10 minute period of adjustment, followed by 10, later 12, intervals of non-response each lasting for a maximum of 15 seconds before the interviewer would initiate, a five minute "recovery" period, again of adjustment, then 12 interruptions where the interviewer tried to dominate but persisted only 5 seconds, and a final five minute recovery period. Using two interviewers trained in the method, not now the psychiatrists, and administering it to a series of over 500 cadets, each interviewer taking one in turn, the stress periods showed magnificent similarity in split-half reliability, but the non-directive, free adjustment periods were consistently different.¹⁴ It was obvious that non-directive language was not enough; we had to specify the interactional standards for the initial and recovery periods. For practical reasons, I was unable at that time to carry out an adequate reliability study, though the small series done showed Pearson r's at .9 and above, but the testing of the interview's reliability was taken up by Saslow, Matarazzo et al, who, in a variety of studies, showed the high reliability which could be obtained.¹⁵

Even before these inquiries were carried out, I had begun the first of a long series of studies in business organizations. These were a consequence of my concern with the interactional properties of organizational systems and how the ways in which they were set up facilitated or disturbed the individuals occupying specific positions, given the interaction properties which they brought to these job situations. Although some of the implications of these studies for our work with adolescents will be discussed in later chapters, they made possible two developments: 1) an increasing sophistication in the design of what we now call the diagnostic interviews, including the realization that strong emotional factors might bias the initial period because of the stress which meeting a new person, having an interview in a new situation, etc., could create, and 2) the importance of controlling the interviewer's performance more completely, since the interviewers were chosen from personnel departments of the companies with which we worked.

We saw first that two things had to be done immediately. We had to lengthen the first period to 15 minutes to allow the interactional expression of what might be called "shyness", "hostility", "pretentiousness" to wear off if we were to get a reasonable measure of the unstressed state. We also had to devise a set of rules for the extremes -- for the long-winded person, say, from whom only a few units of action could be elicited in 15 minutes. Figure 1 summarizes the procedure we now follow.

There are more than a few individuals who talk without stopping for the whole 15 minutes, and sometimes much longer. And there is the person who doesn't talk, whose latencies require a "prodding" by the interviewer with a restatement of the last response. We also learned to pay greater attention to, and to standardize, the non-directiveness of the non-directive interview since it was clear that the existing "rules" from my own background with Mayo, Roethlisberger and Dickson¹⁶ and my inquiry into what Rogers and his group were then (and still are) doing,¹⁷ supplemented by detailed knowledge of psychoanalytic practice, were all too vague, too semantically unsophisticated. I have elsewhere discussed the communication problems in detail, their potential impacts on the flow of interaction, and how they should be dealt with apart from more technical accounts of its use in interviewing.¹⁸ Appendix II provides a useful description of the procedures used.

Control Systems to Maintain Interviewer Reliability

If one doesn't rely on exact measurements of interaction, reliability might not appear a problem. However, it is fundamental to scientific investigation whether the interviewers are psychiatrists who have developed their own idiosyncratic patterns (roles) or personnel department employees, with or without any formal training or, as we now do, deliberately use non-professionals by preference. In the early 40's, all the interviewer had to guide him was a large clock with an easily distinguished sweep-second hand, mounted on the wall behind the subject's chair. To use it, he had to keep track of the length of time allotted to each period, the duration of seconds of no response or of interruption, and also of the length of each response itself. It is not so easy, yet it was under these conditions that the reliability studies previously referred to were conducted.

To increase reliability, the first of several computer-operated interaction control systems was developed. Instead of the clock, a box with lights took its place: Each period had its own light which went on when the period began and went off as soon as the specified time was over. To control the length of non-responses, a light went on when the subject stopped talking and would remain on for 15 seconds unless the subject took the initiative. Another light was set to start flashing at the 5th, and then at the 11th non-response by the interviewer and a similar counter was used for interruptions. This was supplemented, when eliciting the dominance variables, by a light which went on after the subject's action,

Figure 1

Standards for Diagnostic Interviews

These standards are limited to the standard diagnostic interviews and do not apply to treatment sessions. Both the actual time programmed and the conversion to 100th's of a minute shown on the print-out itself are given so the interviewer can check for any deviations that might have occurred. Plus refers to an interruption, double action; minus to a no-response or latency of response, double "silence". The capitalized alphabetical prefix signifies who was responsible. Except where indicated no latencies or interruptions are permitted to B.

1. B responses when A stops are to last for 5 seconds. A print-out of 8 or 9 counts (4.8 or 5.4 seconds respectively) is within limits.
2. A full B minus (no-response) in the second period when followed by an action initiated by B (a prod) must be for 15 seconds (25 counts).
3. A full A minus followed by a B act (a prod) is to last for 15 seconds (25 counts).
4. All prods in either situation last for 5 seconds.
5. An A act, to be interrupted by a B+ in the 4th period, is to last for 5 seconds (5 counts), before B interrupts (B+).
6. A B plus in the 4th period is to last for 5 seconds (8 or 9 counts).
7. The minimum length for the first period of the interview is 15 minutes. If 4 A acts have not been completed at the end of this time, the period continues until 4 A acts have been obtained or 45 minutes have passed.
8. There is no minimum length for the second period. The period lasts until 12 no-responses have occurred or 45 minutes have passed with a minimum of 4 acts by A.
9. The 3rd and 5th periods last for a minimum of 5 minutes. If fewer than 4 A acts have occurred within this time, the period continues until 4 A acts have been obtained or 15 minutes have passed.* In both cases, it is desirable to continue up to the 15 minutes point if A's actions have not reached the base established in the first period.
10. There is no minimum length for the fourth period. The period lasts until 12 interruptions have occurred or 45 minutes have passed and 6 acts by A have taken place.
11. A Free-Interaction session follows every interview. This period lasts a minimum of five minutes and should be buttoned.

* It sometimes happens that a subject's pattern will indicate severe stress during the 3rd or 5th period. If, for example, a subject with a base of approximately 2 minutes reacts to stress with 8 minute (or ten second) units, the period should be extended for 15 minutes.

which the interviewer was to interrupt, had continued for 3 seconds; it then remained on for 5 seconds, the specified length of the planned interruption. This system gave us much better control over what the interviewer did and made it far easier for him to follow the program.

In recent years, however, with the development of programmed interaction therapy and the extensions and variations of the diagnostic interview, it became necessary to devise a more flexible and comprehensive computer-controlled unit which could be preset to any desired combination of interview (interaction) parameters. It uses both lights and digital displays; it is highly adaptable to all types of roles which an individual may wish to utilize.¹⁹ What it does, and how it makes possible quite sophisticated experimental programs, will be evident when I take up the therapeutic work which we did with the adolescents.

It is not enough, however, to provide accurate programming displays for the interviewer to follow. One also would like to know whether, in fact, he followed what the lights and numbers told him to do, with check-sampling of the non-directive content then being the only area with which a human supervisor has to concern himself. Each interview or other type of interactional contact is observed, measured and stored on magnetic tape by specially designed event recorders, ORL - 346. These tapes are scanned and organized sequentially by a real time to digital computer, ORL 337, which produces a paper tape which can be run through any standard computer, in our case an IBM 360-44 or 50. The print-out used to be gone over by a supervisor, as well as by the interviewer himself, to check for deviations, particularly to evaluate their magnitude and potential for altering the results significantly; at the worst, making them unstable. To get around this laborious and too often hurried check, a computer program was written which sets limits of permissible deviation, thus simulating the interview, and classifies these as minor or major depending on their magnitude. The flow chart in Appendix I, Exhibit 1, describes the process.

The program is invaluable in training, since it shows the interviewer exactly where he deviated in following the program. It, of course, makes it possible to evaluate the reliability of the data obtained on a continuing basis and, through other procedures, to compute the significance of the deviation in affecting the results of a diagnostic or therapeutic session.

The importance of these technical developments, and the evolutionary path followed in arriving there, has had both practical and theoretical consequences. Not only can we be confident of the accuracy of our data as a quantitative report of what actually transpired. More important, we can now design a wide variety of experiments in therapy designed for the particular problem of adjustment revealed in the diagnostic interview. We no longer need to depend on the idiosyncratic style which a particular therapist uses, the elements of which he cannot describe with any accuracy inter-

actionally and which, though it might be effective with one kind of patient, would have severely disturbing effects on others. In addition, such intuitively-generated interviews are not, in fact, replicable.

The use of such programmed diagnostic interviews is a necessity, as our earliest work on psychiatrists demonstrated (a finding confirmed by others)²⁰ since the interactional personality of the therapist and his reactions to stress (psychoanalysts call it counter-transference) are not too flexible. The role he adopts is one congenial to himself, however he may rationalize it conceptually. This is why the choice of a psychiatrist by someone needing help, or the decision by a psychiatrist as to whether he can "work" with the patient, is so highly intuitive, and can be destructive. Some psychiatrists gain the reputation among their colleagues of being skilled at handling particular kinds of patient illness. To some extent this may be true, but what is ignored is that only if the interactional properties of the patient are defined can one know whether assumed symptomatology and interaction are, in fact, parallel to one another.* Appendix II describes the programmed diagnostic interview, the rules for its conduct and defines the interaction variables of personality and temperament referred to as we go along.

*Before going on, it needs to be emphasized that the measurements we obtain by using these criteria of contraction and relaxation yield remarkably high reliabilities; in other words, when two observers, adequately separated from one another in isolated booths so that they cannot be aware of what the other is doing, observe the same interview, the measurements are almost always identical. In such a situation, some error can be introduced by the viewing angle, but Phillips et al report a comparison of an experienced observer with someone who had learned the technique from published accounts.²¹ On normals, correlation coefficients of 1.00 were obtained in most situations; the lowest obtained, in very fast interaction, with many interruptions and interruptions of interruptions was .78. In programmed interaction, to which we shall come, the interviewer now records the interaction directly, (though checked by an observer) aided by far better viewing opportunities than even an observer can get in the same room. For he must be at right angles and at least 12 feet away from the interacting pair, to be able to watch both at the same time. Either situation is of course, definitely preferable to fixed booths and one-way glass.

Chapter 4

Interactional Diagnosis

As we have seen, the diagnostic interview is completely programmed both as to the quantitative values of the interaction patterns used by the interviewer, the sequence in which they occur and the verbal phrases permissible to "fill in" the given response. As a consequence, it is easy to describe the interaction variables (patterns) since they occur within an experimentally prescribed framework. By contrast to interaction in everyday life, where the interaction patterns may appear inextricably mixed and can vary in magnitude from moment to moment (apparently), the interview design gives us an opportunity to see what happens, for example, when attempts to dominate are repeated for predetermined intervals of time without being confounded by other variables.

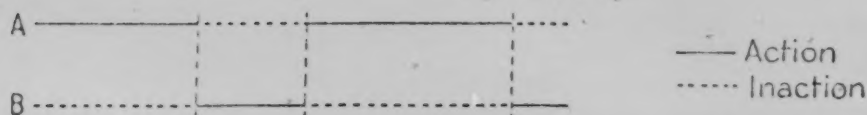
Since each person in the interview, or other contact, is observed separately, so to speak, one key of the event recorder assigned to each, action is followed by inaction (silence, if we remember that our use of the term includes also the absence of any non-verbal response). The sum of each action and each silence establishes the tempo or frequency of the beat, marked by the beginning of each action. But, by hypothesis, we assume, and can demonstrate mathematically, that the action-silence rhythms of each person are interdependent (or coupled in the technical sense).¹ That is, they mutually modify each other (even in the experimental design of the interview) since how long the interviewer is silent, when he has to initiate, etc., are a function of what the subject does.

Where complementarity (perfect adjustment) doesn't occur, the resulting asynchronies are of two types, a) those that occur after both persons have been silent simultaneously. These make up the initiative variables; and b) their converse, the dominance variables which describe the various possible combinations when both are acting at the same time.² These two alternate states are often referred to as double actions and double silences in the literature. The pattern or sequence making up each of the variables begins with the condition where one person is acting and the other silent. The end of the pattern (variable) is defined when this state recurs. Which of the two persons is in the preliminary active state, and which silent, further differentiates the variables, taken from the point of view of the individual whom we select as our focus of interest; in the interview, the subject. This is also true of the ending state, that is, we differentiate, for example, between that case where the boy persists for longer than 5 seconds and dominates the interviewer, and the converse.

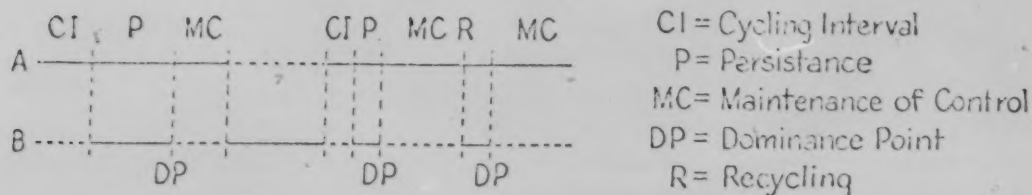
Figure 2

Basic Interaction Sequences

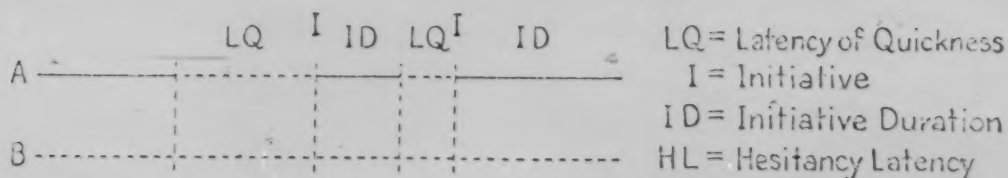
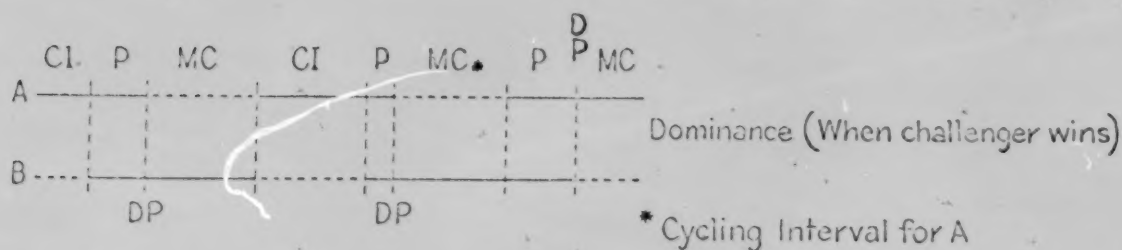
Synchrony



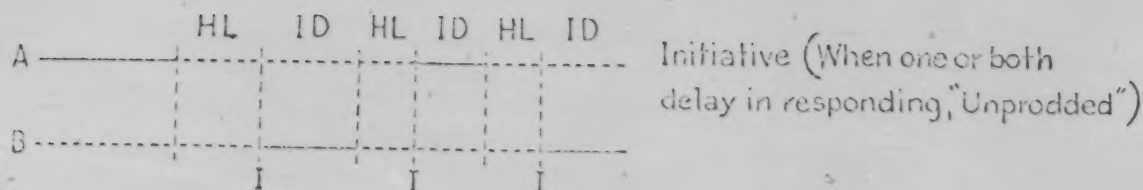
Asynchrony - Stresses



Dominance (When challenger loses)



Initiative (When one person is unresponsive and is "Prodded")



Note: Instances occur where both A & B are not acting and start in simultaneously or alternatively, stop acting simultaneously, but are rare.

Now the reason for stating so abstractly the conditions in terms of which the interactional variables are defined is that it is the extreme values of these variables, alone or in combination, which make up the disorders which characterize our adolescents. In varying degrees of magnitude, they are also to be identified in many of those, who not being hospitalized or in jail, we might consider to be "normal". And though a complete list, and their definitions, again has to be abstract, it is necessary to outline them if we are to understand the foundations on which interactional diagnosis is built, and therapy-rehabilitation decided upon and prescribed.

The Basic Rhythms of the Personality

If we start with the basic components of the interaction system -- Action, Silence, Tempo -- we begin by determining the magnitudes, measured in 100ths of a minute, of each. We select that part of the interview where, in a first approximation, we can say that stress effects are minimal. In our design, this state is to be found after the effects of beginning the interview, of meeting someone new, or being put in a new situation, wear-off (if they do). The criteria by which we can easily determine whether what we call a Basal Condition or Base prevails are described briefly in the accompanying footnote.*

* The criterion for determining when the initial stress was wearing off was the increasing regularity of the values of actions and silences. As a simple means of determining the inflexion point, when the reaction to the start of the interview was still present, we computed a coefficient of variation backwards, that is, we began with the last two values, computed the C.V. (actually using a mean deviation for simplicity), added the next and the next, computing each new C.V. until a significant deviation of over 10% occurred. It is unnecessary to elaborate on the obvious arithmetical limitations, but by carefully inspecting the raw values, it became evident that we were also seeing (by necessity) a regular rhythm being expressed. A more accurate method is derived from the differential equations which describe the rhythms by using what are called coupled relaxation oscillators.

For those less technically inclined, they can be summarized by saying that the rhythms of these three variables become regular (the variance decreases) as determined by comparing the magnitude of the values of each of the durations to the next. Some boys (and adults) are so disturbed (have such severe reaction patterns) that a base cannot be determined. Repeating the diagnostic interview one or more times at a later date is thus necessary.

Apart from the actual values of the durations which can be expressed by an arithmetical mean or average or, more technically, by the parameters of a periodic function, we are also interested in the degree of regularity of the values within the base from which we derive a measure of Flexibility. In addition, we need to know the degree to which an individual is active and inactive within any given tempo. The greater the silence relative to action, the greater the opportunity for the other person to fit his actions within the other's silence intervals. This ratio is usually referred to as Listening Ability, not that it assumes comprehension or attention, but at least not competition for control by dominating. Some people have a relatively fast beat but act briefly; others may be slow, but talk almost continuously in each action unit, leaving little or no available interval of silence into which the other can fit an action without asynchrony.

It is important to mention, though it cannot be elaborated on here, that most people are able to shift tempo, action and silence within idiosyncratic limits to make it possible to adjust, for limited periods, to persons with quite disparate patterns. These shifts operate like the harmonics in music. There is a fundamental rhythm and a family or repertoire (spectrum) of harmonics, often only one or two, which occur as proportionate multiples or fractions of the fundamental rhythm. This is why an interviewer can sustain programmed interaction for the length of an interview. This also is why some people cannot "learn" to interview because the necessary "harmonics" are not present; it is also why there is a limit to how much interviewing any one person can do in a day.

It is important to realize that individuals differ remarkably in the basal values of these variables (and their harmonics). I need not elaborate on the differences between the garrulous versus the taciturn, and all the variations our language suggests on these themes. But it also has to be realized that these provide the substructure, the foundation, for the type and the severity (magnitude) of the reaction patterns set in motion by the stress of asynchrony. And it should be pointed out that the magnitude of a reaction has to be looked at by comparison to the base from which it represents a deviation. Hence one cannot assume that mere size (i.e., duration in 100th's of a minute) is decisive as to the severity of the reaction. As we shall shortly see, if a long-winded (high activity)

person shows an increase of 200, in real time, this would be 120 seconds or two minutes. on the average, this would be minimal if, as in the case of E.L., sketched in Chapter 2, his base action value is 800. For such an increase would amount to a 400% jump over his base. (See technical note below)*.

Now the reason why we have begun this discussion using the title, "The Basic Rhythms of the Personality" is that it is essential to differentiate the basic properties of the individual which presumably are given; that is, there is good evidence from genetics⁶ and from studies of new-born babies to assume that these rhythms are what the individual brings into the world.^{7,8} Granted, as we shall see, that they can be distorted or hidden as a consequence of growing up by the forced changes which asynchronous interaction can bring about in the young child. Still we assume that our task in therapy and rehabilitation is to make their reemergence possible. We do this by reducing the magnitude of the violent reactions to stress which we call the temperamental disorders (when they are severe); reactions for the general case.

But before turning to these effects of the stress of asynchronous interaction, we have to extend our discussion of the personality factors to include two properties of the initiative and dominance variables which, in the lower animals, appear to be species-specific and in the human infant are present almost from birth. These are the frequency with which the individual takes the initiative (under sub-minimal stress conditions) and how long he waits to do so and, in the same way, the frequency with which he dominates and how long he will persist

* If we then calculated the ratio of the base to the first or initial section of the period (before the inflexion point so determined), we had a measure of the severity of the reaction. A value significantly below unity meant short actions. Where the value was much above 1.00, the person is being pressed to speak by his internal state. And so for all the other periods, both during stress and after.

Though we have used average values as a convenience, examination of the measurements occurring in periods of stress and after stress, does not reveal the properties of the normal, or Gaussian, distribution. They are exponential; their values change (in a first approximation, logarithmically). Thus, if the durations are plotted in sequence, we are dealing with curves with either negative or positive slopes, building up or decaying at an exponential rate. The reasons for this have been discussed in more technical publications.^{3,4} We are presently working out a full mathematical description of these reaction patterns.⁵

to do so. It should be emphasized that there is a point at which stress does begin to operate, that is, the stress is sufficiently strong so that these variables become affected by it.

Nevertheless it is well-known, for example, that babies differ remarkably in initiative. Some lie quietly in their cribs waiting for someone (mother) to initiate to them; others, higher in activity repeatedly initiate when their rhythms move them.⁹ In the same way, just as with various strains and species of animals, babies will differ (again as a function of their rhythms) in persisting against action by another; some are clearly more dominant than others. This is evidenced when an adult breaks in (double acts) when a baby is acting. If it stops forthwith, it is dominated; if it persists in its action, it is at least trying to dominate. These rhythms, though associated with, also appear to be relatively independent of, the action-inaction rhythms. They control the need to start to act, but not how long the action will be. They are thus derivatives of the tempo or beat of the rhythm and its harmonics, but not the total output of activity either within a single action or over the 24-hour day.

Disturbances to Personality Rhythms Produced by Stress

It is important to realize that each instance of asynchrony, no matter how small it may appear, is to be regarded, in interaction terms, as a stress. We are accustomed to think of stress as something large and ponderable, of sufficient magnitude to be obvious to anyone. And this might be true for those who are not suffering from psychiatric disorders. (I make this a general statement rather than limit it to sociopaths and psychopaths because it is well known that what appear to be trivial occurrences can have severe effects, in the psychotics, for example.) But with these adolescents, and with adults also, an often remarked characteristic of the disorder is the minimal amount of stress which will trigger off a violent reaction. As far as one can tell from the histories of the boys, many of their actions which caused police intervention happened "for no apparent reason", which simply means, as one can demonstrate in the therapeutic process, that the brief duration of an attempt to dominate, the momentary hesitancy before responding to a request, was enough to bring about an attempt to assault the unaware "perpetrator".

On other grounds, too, the reasons for so defining stress as an instance of asynchrony independent of its magnitude is essential if we are to understand, as we must, that an important and obvious differential between these ill young people and the "normals" (without defining that ambiguous term at this moment) is that the magnitude (duration) associated with the stress is small; with the

rest of us (well, at least some of us), there has to be a considerable increase in magnitude before we react. If we think of these measures, then, on a continuous curve, there is a point on that curve where a change takes place in the reaction rate, an inflexion point which is usually referred to as a threshold. Hence sociopaths have extremely low thresholds to particular types of stresses; the rest of us have higher ones, less easy to trigger off when very brief magnitudes occur.

It also has to be remembered that these temperamental reactions which asynchrony sets in motion are under the control of the autonomic nervous system. Each instance of stress, its impact varying with its magnitude, sets off a reaction which is transmitted (when large enough) from the hypothalamus and its coordinate limbic regions (the Papez circuit, so called) to other organs. In the process, hormones like adrenalin, noradrenalin, ACTH, acetylcholine, are released into the blood stream as well as activating the organs themselves, e.g., contractions of the stomach or gut. These hormones have a half-life of effect, determined by the length of time it takes for them to be metabolized and thus transformed so they no longer operate. Since different types of stress bring about different hormonal secretions and combinations thereof, it is easy to see that a reasonably complex biochemical "mix" can be set off in the body.¹⁰

Moreover, in every day life, stresses do not occur in the pure distillates which the programmed interaction interview produces. They are mixed, and the cumulative process is thus one in which a preponderance of a particular biochemical variant finally takes over. Adolescents ordinarily have extremely low thresholds to several types of stresses; as we shall see, these can have complex and rapid consequences.

Even for the rest of us, the repetition of small amounts of stress of a particular type can build up sufficient concentration to overcome the threshold, previously present, and trigger off a violent reaction. Such instances of habitual asynchronies cumulating (and also lowering the thresholds systematically) are a common consequence of two people living together -- man and wife, brother and sister -- where what appear to be minor instances of lack of adjustment bring about violence through repetition. The constant trickle of drops of water is a reasonable analogy, particularly if we realize that its effects are not only cumulative, but at a certain point have reached the concentration sufficient to set off an exponential reaction, i.e., to mix metaphors, there is a final straw which breaks the camel's back. Whether the cumulation of stresses has lowered the threshold for that type of stress with all other individuals, or only in the limited situation, can only be told from the diagnostic interview. To try to categorize an instance of severe marital incompatibility as "situational" requires hard data to justify the distinction.

No matter what the stress (though that we shall discuss shortly), its effects are determined by the shifts that take place in the basal rhythms. For differential diagnosis, a further distinction may be required. There are many serious pathologies which require both the comparison to the base and of what went on during and after stress. For these disorders present the most severe reaction after the stress is removed. It is almost as if the stress held down the cover on the kettle, the water all the while boiling more furiously. Lifting it only so slightly is followed by an explosion of steam.

But these are biochemical and neurological processes so what is happening is that the longer the stress continues, the greater the concentrations of hormonal substances (special to that stress) which release their energy through the skeletal muscle systems. Coincident with these are the changes in other body functions -- heart rate, blood pressure and all the rest. To be technical, these changes also involve activation of the smooth muscles controlling the internal rhythms of organs themselves. To the astute observer, not merely does the interactional data tell the story, but he also sees changes in surface vascular patterns, expression and color of the face, tremor of the muscles, sweating of the face and palms, contraction or widening of the iris of the eye, all signs which telegraph the general nature of the autonomic reactions, indicating whether the sympathetic or parasympathetic division of the autonomic nervous system is predominant in the interactional changes. I have elsewhere discussed this whole process in some detail.¹¹ All I can do here is to emphasize the presence of different autonomic-skeletal muscle configurations which temperamental patterns reveal.

Identification of the Temperamental Reactions

In the early years of our work, once the standard interview had been given its original form, the relationship of the personality factors to diagnostic categories in psychiatry and to type of job and performance in business, particularly among salespeople in department stores, proved intriguing. The latter was the most rewarding. Here one had a solid objective criterion of performance -- average daily sales for people with equal selling opportunity, i.e., equal opportunity to sell the same kinds of merchandise within comparable work week schedules. It was here that natural experiments were conducted. Top salespeople were transferred from their own department to another with a different interactional pattern of selling "to strengthen it", yet we found they became mediocre performers and, moreover, were upset by the situation.¹² By determining the values of the interaction variables associated with success in each type of selling which we began to define observationally and operationally, we could then make blindfold predictions on the basis of interview data alone.¹³

It thus became evident that the fit of interactional personality to job situation was remarkably sensitive to differences in the job and in the individual. This was no matter of square pegs and round holes, but fitting configurations of interaction variables together. In all this early work, our interest was centered on the basic personality factors -- actions, inactions, tempo, flexibility, and initiative and dominance. We recognized that some stress was involved in eliciting initiative and dominance values but we assumed, as is often the case, that the amount of stress the no-response and interruption programs produced was at the threshold level. I often used for illustration the analogy of the scratch reaction in the test for allergic substances. Later, as we were able to give quantitative meaning to threshold and stress reactions, we found this held true for many of the people in the business world.

It was not until 1948 that I began to think much more furiously about stress within the interactional contact. Before that, I saw it primarily in changes in the amount and frequency of contacts in relationships, as at the death of a parent, the birth of a child, the establishment of a marriage -- the life crises.¹⁴ A personnel manager called my attention to an interview record on a buyer and asked what I saw that seemed unusual. What was obvious was an extremely long burst of activity in the "recovery" period after not getting a response. I was then told about the tantrums that overcame the buyer and plagued her staff (and the management) when responses weren't forthcoming. I then began to look for other such anomalies. In the next five years, a wide variety of what we now call the temperamental reactions were identified. They were validated on the descriptive level by accounts of how the individual behaved in specific situations.¹⁵ We were unable to conduct interaction measurements on such situations in the selling departments, because we did not have the kind of light-weight, battery-operated, interaction event recorders now available.

It also became evident, even in these so-called normals, that such extreme reactions were highly disturbing to everyone, including the person so beset. The personnel problems created by such "temperamental outbursts" made the person unable to get along in the organization, even though his or her personality factors might be appropriate for the job.¹⁶ Once we recognized the "animal", we had to find a more precise method of estimating its magnitude. This led us, more systematically, to consider the relationship (ratio) of the average reaction during or after the stress to the average values in the initial period which we had always thought of as basal and this led to our present formulation. It is worth emphasizing that we found, among the adults in business organizations, many severely disturbed individuals who were unable to get along with others. They were clearly sociopaths and psychopaths, many identified by police or security force efforts.

Figure 3

PERSONALITY FACTORS

FACTORS	V. L.	LOW	MEDIUM	HIGH	V. H.	VALUE
Action	4.0	1.0	1.0	1.0	2.0	Action lb
Listening Ability	-.02	.02	.07	.12		deviation from S/A lb
Flex. (Of Pace)	.50	.25	1.20	0.55		Flex. Tempo
Over eagerness	.25	.75	1.25	1.75		A's adj. +(1b,3,5)
Hesitancy	-1.0	-1.5	-2.0	-2.5		A's adj. -(1b,3,5)
Initiative	20	10	60	80		Init. 2nd period
Quickness	-20	-15	-10	-5		B's adj. 2nd period
Dom. (B's Int.)	20	10	60	80		A wins, 4th period
Dom. (A's Int.)	20	10	60	80		A wins, 4th period
Persistence	20	40	60	80		A/b

Figure 4a

Temperamental Factors

		Low	Med.	High	V.H.
1st	1. Shy or Reserved	.90----	.75----	.50----	.25----
	2. Tries to Make Good First Impression	1.30----	1.50----	2.50----	3.50----
	3a Prefers Doing Things Himself - P	.75----	.50----	.25----	.10----
	3b Prefers Doing Things Himself - non P	.75----	.50----	.25----	.10----
2nd	4a Takes the Floor - P	1.10----	1.50----	1.80----	2.20----
	4b Takes the Floor - non P	1.10----	1.50----	1.80----	2.20----
	5. Questioning	1.00----	1.10----	1.25----	1.50----
	6. Easily Discouraged	1.20 less	2.00 less	3.00 less	4.00 less
	7. Impatient	.80----	.60----	.40----	.20----
	8. Over-Talkative When Upset	1.30----	2.00----	3.00----	4.00----
3rd	9. Distrustful	.60----	.80----	1.00----	1.50----
	10. Defensive	1.00----	1.25----	1.50----	2.00----
	11. Competitive	.75more	1.50more	2.25more	3.00more
4th	12. Submissive	1.20more	2.00more	3.00more	4.00more
	13. Excitable or Impulsive	1.75----	1.50----	1.25----	1.00----
	14. Bears a Grudge	.90----	.50----	.25----	.10----
	15. Over-Sensitive	.80----	.60----	.40----	.20----
5th	16. Petulant	.90----	.75----	.60----	.40----
	17. Self-Justifies	1.30----	1.50----	2.50----	4.00----

Figure 4b

Methods of Computing
Temperamental Factors

		Low	Med.	High	V.H.
1st	1. Shy or Reserved		A 1a/b	.90 or	less
	2. Tries to Make Good First Impression		A 1a/b	1.20 or	more
	3a Prefers Doing Things Himself - P	Prodded	A/b	.75 or	less
	3b Prefers Doing Things Himself - non P	UnPr	A/b	.75 or	less
2nd	4a Takes the Floor - P	Prodded	A/b	1.30 or	more
	4b Takes the Floor - non P	UnPr	A/b	1.30 or	more
	5. Questioning	T2/b > 1.00	A2/b 1.00	S/b	1.00
	6. Easily Discouraged	A's-(2nd)	1.20 more than		A's-(b)
3rd	7. Impatient		A 3/b	.80 or	less
	8. Over-Talkative When Upset		A 3/b	1.30 or	more
	9. Distrustful (only if #5 present)	A3/2 1.00	or less	S3/2 1.00	to .50
	10. Defensive		A 4/b	1.00 or	more
4th	11. Competitive	A+ (4th)	.75 more than A+		(b)
	12. Submissive	A- (4th)	.20 more than A-		(b)
5th	13. Excitable or Impulsive	A 5/4 up no more than 1.75	A 5/b	.90 or	less
	14. Bears a Grudge	A 5/4 .90 or less and	T 5/4	1.00 or	more
	15. Over-Sensitive	A 5/4 up more than 1.75 and A5/6		.80 or	less
	16. Petulant	A 5/4 .90 or less and	T 5/4	.90 or	less
	17. Self-Justifies		A 5/b	1.20 or	more

In referring to earlier literature, these temperamental reaction patterns are assigned names, reasonably value-free, used by informants in the validation process. We deliberately avoided psychiatric terms, not merely because of their semantic ambiguities, but also because experience had taught us that too many people could be easily threatened by them, forgetting that they only could be applied to the extreme reaction patterns, and then often in combination. It is difficult to choose terms which avoid misinterpretation. Though one could just as well use letters of the alphabet, you still have to translate to anyone needing explanation; thus you find yourself back in the same semantic traps. Further, it was (and is) our rule that anyone so wishing could see his total profile (personality states and temperamental patterns) and discuss it. There were obvious difficulties in so doing if we were going to flaunt psychiatric terms to show our "sophistication".

Over the years, in a number of organizations, we built up our "normal" series to many thousands. From this data, we determined, again by direct verification through "natural history" type reports, the ranges for the population with whom we were working.¹⁷ The extreme ranges fit our adolescents very neatly, as we shall see.

The Temperamental Disorders

In what follows, I am making a distinction between the temperamental reactions which we find in the population we studied in business and government, most of whom were employed, briefly or for long periods, and the temperamental disorders. The distinction is purely quantitative, that is to say, it includes only those individuals whose values fall in the extreme ranges given on the standard profile form worked out for business use. As it turns out, it is in these extreme ranges that the measured values of our adolescents are to be found. This does not mean, however, that each extreme value either on the personality or temperament ranges presented in Figures 3 and 4, by itself, is decisive. (It should be pointed that these tables do not include all the formulations which our adolescents reveal.)

Though the action level of most "schizophrenics" is very low,¹⁸ as are the severely depressed, one still may find "taciturn" individuals in the normal group. Conversely, the prolonged durations of action for those regarded as "manic" or in a state of "catatonic excitement" (until these actions become continuous) can also be found, perhaps occupationally selected, among some politicians, professors and other kinds of public speakers. Still, the presence of such extreme values can be extremely limiting, restricting the number of complexity and inter-action forms (like musical forms) which particular roles (and jobs) require. They thus can lead to an increased potential and vulnerability to stress if adequate outlets are not available. I use these

illustrations primarily because they are familiar to most people. As far as the label "schizophrenia" is concerned, many of our boys have been so diagnosed, even after admission to Rockland.

Nor do we have to take refuge in the semantic aberrancies of the content of their speech. What we have to recognize is that the single variable may be highly indicative as, for example, when the adolescent repeatedly shows long latencies before he responds, but it cannot be sufficient for interactional diagnosis, of depression, say. For the fact is, as even the abbreviated (for normal purposes) categories in Figures 3 and 4 suggest, we are dealing with a very large number of possible combinations of the basic interaction variables. In such combinations, though marked increases or decreases from basal values (often, from those manifested during the stress itself) provide the skeleton of the definition, the differential magnitudes of the component variables of the combination determine the kind of autonomic-interactional resultant which can be used to characterize the illness.

For example, if we take two of the categories listed in Figures 3 and 4 for use in placement, what are called Distrustful and Bears a Grudge, they both involve a marked drop in action durations from the base and an increase in the length of silences. They also require that no significant increase should occur from the values under stress. But one occurs after a period (or an instance) of no-response, often called rejection; the other after dominance. The psychiatrist usually labels such behavior, paranoid, and it is true that the symbolic content can be easily so classified. They also may supplement or use as an alternate label the statement that the patients are very hostile. But these are very different states, both in the ways in which the therapy is designed and, of course, in actually handling the patients on the ward. In the latter situation, you learn to respond immediately to an action by the patient, synchronizing to avoid no-response and the liability of a violent repetition of the action; in the second, you avoid even a brief instance of appearing to start to dominate.

But this is only the beginning of the differentiation. If there are marked latencies on the part of the adolescent throughout the interview, the addition of a judgment of "depressed" is almost inevitable, though a major increase during the stress, labelled in this table, Easily Discouraged, when no response is occurring, may alter the frequency with which the violence appears. And this is also true for the increase in latencies during the interval of attempting to dominate the patient. Long latencies when the interviewer has stopped acting, often seeming immobility, suggested Submissiveness as a label, reinforced by observation of animals and humans fighting. If the social environment of the individual is rife with constant struggles for dominance, even if their durations appear to be minimal, the submissive state imposed on the paranoid makes the violence when the stress is over even more surprising.

In addition, a further complication is evidenced when the label, schizophrenia, gets into the discussion. Perhaps the single most obvious factor in that complex interactional state is the erratic and wide swings in the basal action and inaction rhythms.¹⁹ Depending on how great these are, how little they appear to bear any interdependent relationship to the other person's rhythms, i.e., they often appear to be moved by a different drummer, as if the patient was in a separate world, then the several paranoid states become further differentiated. The complications become even greater if there are intervals where the patient interrupts intermittently, mixed with other intervals of latencies.

Now the reason I have gone into this kind of detail about certain states which characterize some of our adolescents is to show that interactional diagnosis must, by necessity, be quantitative, that we are dealing with functionally related variables and that the "emotion", the "mood" or whatever term one might apply, has little meaning unless we apply our quantitative yardsticks to the interactional patterns and their concomitant states. However varied the stresses appear on the surface, they can be broken down into combinations of three categories: 1) no interaction, then beginning interaction, commonly displayed at the beginning of an interview or other social contact and, of course, often inhibiting its occurrence; 2) not getting a response after one has acted and come to an end; and 3) encountering an interruption (the other person acting) which can interfere with the completion of the action required by the internal rhythm of the individual if dominated (and, often, even when he is able to dominate).

And what these stress situations, these types of asynchrony, do is to shift, not merely the durations of the actions and inactions and the tempo or beat within which they are distributed; they also bring about asynchrony durations themselves, latency of response, interruptions by either person. In so doing, they limit the free running time of the rhythm, so to speak, that is, they reduce (or may force an increase in) the durations of partly or completely synchronized actions when one person is acting and the other silent, I use the term "partly", advisedly, since true asynchronization, as I have commented on earlier, only occurs when the whole action, or silence occurs, without the other person failing to adjust (synchronize to his beginnings and endings). In addition, the achievement of initiative or dominance or its loss also make up a significant set of variables in these configurations (for normals as well as the ill).

Limiting ourselves to the three types of stress situations alone, but recognizing that, as in the paranoid states just mentioned, we have often to consider the recovery period after the stress had been removed to see whether a severe reaction there takes place, we have to

Figure 5

TABLE OF TRANSITIONS

Past	Present	$1 \approx A^0$	$2 \approx B^-$	$3 \approx B^+$	$4 \approx B^0$	$5 \approx A^-$	$6 \approx A^+$
1	A^0	Total A's Action	# of A's stops	# of B's Interruptions	AB	X	X
2	B^-	# of A's* Initiations	Total A's Latency	X	# of B's Resumptions	X	X
3	B^+	# of B's Losses (own)	X	Total of B's Double Action	# of A's Losses	X	X
4	B^0	AB	X	X	Total B's Action	# of B's stops	# of A's Interruptions
5	A^-	# of A's Resumptions	X	X	# of B's* Initiations	Total A's Latency	X
6	A^+	# of B's Losses	X	X	# of A's Losses (own)	X	Total A's Double Action

Legend

* Means: Break in alternating pattern occurs in this transition

AB Means: Both keys have to change simultaneously to have a non-zero value in this place

X Means: Such a transition is impossible by definition; value is always zero

Action is understood here as that portion of interview in which person is acting alone

Resumption is starting an action without the other person intervening with a response

Double action of A or B is result of interruption by A or B respectively

Loss is ending of double action and each occurs twice in a table - distinguishing if person lost double action he himself started or vice versa [(own) or blank respectively]

Table can be defined as a matrix T, having elements $T_{i,j}$ ($i, j = 1 \dots 6$)

Each element is an integer value giving number of occurrences of a pair of categories i followed by category j . (Time axis of interview is considered to be discrete and measured in counts $\approx 1/100$ of a minute).

Matrix is generally nonsymmetrical. However, corresponding sums in columns and rows have to agree, (up to a difference of one - depending on handling of origin and termination of interview).

deal essentially with nine compounded situations (where a base is only slowly arrived at). Against these, there are 12 interaction variables necessary for definition (omitting Tempo since it can be subsumed in action and inaction for these purposes alone). A table can easily be constructed for each stress situation showing whether increases or decreases occur in particular disorders and what values represent the extreme case. Figure 5 shows this as a sequence of transition states.

But the situation is not as complicated as a mere contemplation of the permutations and combinations of these variables would suggest. Since the autonomic nervous system provides the underlying states which constrain these variables and mold their quantitative appearance, it becomes possible to reduce the number of configurations of variables to manageable dimensions. I hasten to add that one does not do this by relying on the already existing presence of a neatly divided set of packages of autonomic states. No one has as yet developed a workable model of the system of relationships of the autonomic, because of the complex number of factors that have to be taken into consideration. True, we are accustomed to talking about the main categories, the adrenergic and the cholinergic.²⁰ Bodily changes can roughly be classified into these two configurations, the first primarily controlled by the sympathetic nervous system and the latter by the parasympathetic. Thus adrenalin (epinephrine) is presumably associated with "fear" and "anxiety", noradrenalin (norepinephrine) with "anger" in the sympathetic, and acetylcholine with the parasympathetic. In small amounts, (but not large) this latter substance brings about affection, well-being, love, which I don't bother to put in quotes (evidenced in interaction by sustained synchrony or complementarity). I have elsewhere discussed these relationships to the temperamental reactions and have pointed out that the division -- adrenergic, cholinergic -- is too simple, though it is helpful to give an idea of what goes on.²¹

For we observe in the reactions to stress and, in particular, in their extreme states, that there are two major reaction types, the over-reaction -- the marked increase in activity -- and the under-reaction -- a decrease in activity which may or may not be associated with a marked increase in silence. In a highly over-simplified way, one can speed up the tempo, shorten the actions and silences by adrenalin (or by thyroid extract or in hyperthyroidism), one can increase aggression (attempts to dominate) with noradrenalin or lengthen actions with acetylcholine (mecholyl). But increase the stress (or the amount), and the anxiety can shift to paralyzing fear, and so on. This is not the place to discuss what changes the autonomic brings about in the interaction patterns which are managed by the skeletal muscles except to emphasize that we are dealing, as I said earlier, with a complex biochemical "mix", not with isolated secretions of a single hormone.

Fortunately, one can simplify the body states by mathematical analysis of the interaction patterns themselves. This means one can reduce the complexity of the variables involved through differential equations built on the properties of the rhythms from which we can predict what happens when two individuals with two different rhythmic patterns are put together. Thus we are able to identify the underlying processes controlling these configurations, to establish the mathematical values of the thresholds and to make reasonably accurate predictions as to the course of the disease. From the practical point of view, these permit diagnosis to be made more systematically, but they require utilization of the computer programs by which the data of the diagnostic interviews and the therapy sessions can be transformed into the appropriate syndromes and their management. These will be available in manual form by the end of the year. But one can still make immediate use of the categories outlined in the figures, following the rules for computation of averages and ratios given after each figure.

If we utilize these procedures for differential diagnosis of the adolescents with whom we worked, it becomes clear that there are a large variety of diagnostic configurations for sociopaths and psychopaths, not simply one. As we shall see, only by separating these out and treating each of them by the appropriate programmed interaction therapy pattern required can we make substantial improvement in them.

* * * *

By way of concluding this chapter, it is worth pointing out that this evidence, supported by inferences from the literature (and our own work on chronic schizophrenics, on individuals with "psychosomatic disorders" and, of course, on normals) suggests that a wide range of traditional psychiatric diagnostic entities can be brought together into what might be called the Chronic Autonomic-Interaction Syndrome. This syndrome is made up of a number of disorders, each with its quantitative definition, its ranges of variations and its indicated course of treatment and rehabilitation. The term, personality disorder, might be broadened for this purpose, but it would require admitting the psychoneurotic disorders, the present personality disorders, many of the psychoses (that is,

individuals so labelled) and the psychosomatic disorders (the autonomic and visceral disorders of the DSM II).*

For the whole Chronic Autonomic-Interaction Syndrome, the variants which occur are better described by the term I have used for many years, the Temperamental Disorders. This emphasizes the continuum from reaction to disorder in terms of the magnitude of the reaction, thus enabling us to see the presence of such states in "normal" individuals, who can be vulnerable to a substantial increase in the amount of stress they experience. It also makes evident that we believe, and the evidence demonstrates, that these are reversible states, provided therapy is programmed to deal with the particular stress to which the individual is vulnerable and the specific reaction patterns he exhibits. They are chronic because they are established early in life as our adolescent histories demonstrate.

One can bring in Freud for support since this appears to be a necessary invocation for many people. He spoke of the transference reactions of the neurosis, (a term broader in scope for him than the meaning held today) those "infantile" reaction patterns, early established, which become repetitive whenever equivalent stress situations arise.²² Asthma, ulcers, colitis, cardiovascular and a host of other disorders, given the inappropriate but popular name, psychosomatic, are the most useful model for our understanding. True, they are triggered off by other factors, allergens and the like, but they are similar in that an early vulnerability did develop, perhaps on a genetic substrate, and they are exacerbated by interpersonal stress or biochemical malfunction or both. (Interestingly, many sociopaths also have "psychosomatic" disorders though no one has systematically investigated their interdependence.)

* (It is probable that a similar classification could be made for the psychoses themselves, but it would be very different since, in the chronic states and the early psychoses, the significant distortion in basal rhythms suggests that, as a consequence of the disease, the state of the autonomic-interaction system has shifted, and a new "equilibrium" has been established. In other words, the circadian rhythms of activity and inactivity, their biochemical and physiological components and the interaction rhythms making them up, have taken on new parameters with the displacement of activity to an irregular and disordered system, characterized by muscle system discontinuities. When I say, equilibrium, I am talking about a new dynamic state, difficult to reverse, not of a value-laden condition of balance.)

Chapter 5

Differential Environmental Pathologies and Therapeutics

In theory, we all accept the importance of the influence upon us of the external environment without paying much attention to the ways in which its moment to moment impacts take place. It is so easy to use broad, and to us, self-evident terms -- "broken home", "inadequate mother", "hostile father or stepfather" -- as if these labels were sufficient to give us an accurate description of the whole sequence of interactional events in which the boy took part, before he came to our attention. Nor do we do better in the hospital, clinic, mental health center or reform school. And when he leaves, the same clichés are right at hand, proving only that lazy linguistic habits are far preferable to analysis.

Moreover, the world to which he returns (and from which he came) is given even shorter shrift. It is the "ghetto", but what his ghetto is, what constitutes his micro-environment, is glossed over either by despair at his fate or impatience with the obstacles placed in his path. If we now realize how finely tuned each individual is, with these adolescents often at the breaking point of minor fluctuations in available adjustment, it might occur to us that precisely similar micro-measurements are necessary, if the interactional environment is to facilitate rehabilitation or once again establish its pathological impacts.

For we have seen, from our brief sketches of some of these boys, how early these stresses appeared, how almost universal they were in all the relationships available. There were few moments when presumably some kind of adjustment was possible, with brother or sister, an occasional relative or perhaps a peer. Stresses began very early (usually much earlier, one is quite sure, than the first statement given in the history). Consider how often those with hyperactive patterns were dealt with by violent beatings by way of "management", the "battered child syndrome",¹ It is hardly surprising that temperamental reactions (disorders) are reported by the age of 3 or 4. Such accounts are matter of course in this kind of work. Perhaps we should be hardened to them. But apart from our possible interests in etiology, and ultimately to some systematic method of prevention (by intervention), we must realize, with each boy, that it is to this universe that he must return and which we need to evaluate for its habilitative potential.

And this needs to be done as part of a continuous process, once the diagnostic interview has been conducted, the interactional diagnosis arrived at, and the therapeutic program planned. This is why we tried, with little success, to obtain useful data from what case history

information was available (boys, remember, were not admitted by us, but transferred from other buildings). In fact, it was commonplace to find so many contradictions and omissions in the information on the family that a few visits to mother and who else was there were usually sufficient to provide leads to other relatives, other possibilities of contact which might make possible some direction which ultimate placement might take.

To do this at all effectively with our small staff was extremely difficult. Too often what was required was extended detective work if the alternatives were to be evaluated from the point of view of the kind of interactional environment which we estimated the boy to need. I would not say that return to the mother was always contraindicated, but exceptions to this informal rule were rare. On the other hand, the legal situation of guardianship, the ambiguities of alternatives, were usually so great that there was nothing else to do. We hoped to be able to get the boy to a point of stability where he could manage these stresses adequately, particularly if we could provide some compensating environmental setting to which he could escape when stresses became too great or which could become a permanent part of his environment.

In a later chapter, I shall comment on the obstacles in the way of so doing. Here I want to concentrate on the general procedures we were able to employ.

Once a boy was admitted to the program, and significant improvement occurred, each of them was evaluated by the analysis of the interaction data on how his personality and temperamental vulnerabilities (and potentials) were changing and what type of environmental situation would be most appropriate for him (however much the thresholds have been altered). More specifically, we had to determine what interaction forms (roles in common and imprecise usage) were most compatible with each boy's interactional characteristics. For this is where his environment, present or future, could reinforce his capacity to adjust to others and to achieve a viable level of accomplishment. On the other hand, a bad choice could destroy whatever he and we have managed to build up, in spite of the countervailing influences of state hospital administration. We began with a potential job placement (only one part of the total environment), since it was more amenable to our efforts.

Now when we speak of interaction forms, we are talking about very precise, quantitatively defined patterns of interaction which would fit his rhythms and through which he could grow because success would reinforce his performance of them.² For example, we would not expect someone extremely shy, unable to take the initiative very frequently, to be able to become a successful salesman, though we know that there may be some special situation, culturally defined, where he would have a better chance than elsewhere.

It takes no profound knowledge of human job requirements to see that door-to-door selling, a type of job often open to these boys, is contraindicated. On the other hand, if this young person could sit at a desk in a room with people coming to him, high initiative would no longer be a necessity. But if he was still quite shy, this would make it difficult unless the contact began by the customer filling out forms, etc. Selling, then, might become possible if some other properties of personality are present, like being able to maintain control by occasional dominance, having high enough activity for that kind of selling, and so on.

Note how the mere description of the physical setting introduces and illustrates the relevance of the cultural dimensions for interaction.* Compare the nakedness of having to go up to a door in a strange neighborhood and knock on it, against the protection of the desk to which people come and which, in itself, begins to structure the interaction. Though both situations might be labelled "selling", the interaction forms are very different. Thus a salesman's role has no single set of values; there are many varieties, each with different quantitative values of the personality parameters required for success.

If we extend this illustration to jobs in general, we find that each of them involves the learning -- deliberately or intuitively -- of a particular set of interaction forms which makes up the total role, whether it is that of a salesman, youth counselor, stock boy, clerical or any other. These forms, which have to be performed by the individual with others, are not arbitrary acquisitions of relatively standardized patterns of interaction. For the mere fact of being in the part (in the theater sense) makes it necessary to adopt particular ways of adjusting, that is, when and how often to initiate, how much to talk and when to listen, when to dominate and maintain control, and so on. The situation, in other words, shapes and reinforces the emergence of the interaction form. Each of these can be described by a quantitative interaction sequence; they are varied by the rhythms which different jobs impose, and the constraints imposed by the cultural dimensions.

Thus we can construct a profile or table, like those given in Chapter 4, for each interaction form. But we have to realize that many jobs, unlike that of the salesman, for example, may require the performance of a number of such forms, with the amount of time during

* I have discussed the cultural dimensions in detail elsewhere -- in Culture and Biological Man and Rehabilitation: Dynamic of Change. Here it is sufficient to understand that these are the ways in which environment, technology, work flow and the like are structured and organized.

the day (or over longer periods) spent in performing any one of them sometimes being brief; at other times, perhaps requiring a major sustained effort for their performance. Thus to be an executive or a supervisor (or foreman) ordinarily requires the performance of many. Each supervisory job differs from the next, in the amount of time spent in "playing" each form, and also in the modifications which a particular form may have to take in different organizational situations. Even being a "general helper" may require several sub-roles.³

In addition, certain temperamental reactions may be entirely contraindicated in managing successful performance, others may be of little importance providing they are not too extreme, while some facilitate performance, like being "pretentious" or, "tending to take the floor," again if they are not high. Remember that severe reactions to stress (unless they have been modified) will counterbalance whatever cognitive or other skills the individual may possess. Extreme autonomic reactions quickly reduce to a minimum the capacity of the individual to learn or to perform simply because he is too emotionally upset. To complicate the matter further, the network of personalities with whom the individual has to work may contain individuals to whom he cannot successfully adapt. Hence, though he may qualify for a particular type of job, this does not mean that his temperamental reactions to some of these others may not negate these personality potentials. The total situation has to be taken into account in evaluating a potential placement.

For most of the adolescents with whom we worked, only a few were at the school achievement level for their age, even fewer had work experience. Their formal cognitive knowledge was, therefore, minimal, including the use of language. This need not be an actual handicap if they can master the educational elements required for vocational performance since actual experimental work in business has shown that the degree of congruence of personality parameters and job (interaction form) parameters is decisive.⁴ This would be untrue only in the obvious case where a formal body of knowledge, e.g., engineering or the law, was necessary. Even where present, success at a particular job will still depend on the interactional fit. The direction which an individual should follow, say in the laboratory, in sales, in management, etc., will be explicitly evidenced in his interactional characteristics.

Comparison of Job Fit and Personality

In the earliest period of our attempts to determine fit between personality variables and the job, in the 1940's, I was concerned with overly simplified procedures. Partly this was the consequence of practical considerations; those using the technique wanted a single

value, some kind of resultant of all the variables measured, which could be used to rank the individual against the available criteria for success. It should be said that these latter were usually ambiguous, except in the case of department store salespeople, where equal opportunity could be determined from average daily sales, taking the precaution to make sure that, in fact, the salespeople compared had equal access to the merchandise, that no physical (architectural) barriers hindered their transactions, like location of the cash register, and that part-time employees were not compared with full-time, and the like.

The idea of a comparison between the parameters of two sets of variables, for the personality and the job, was highly unpopular, particularly with psychologically-trained individuals, since this negated the use of simple correlation procedures. In effect, one had to develop a set of weights to conceal the realities which the variables themselves made evident. Not that it didn't work in predictive studies, but it was cumbersome and artificial. I also insisted, from the beginning, on comparing only those in what we might now call comparable ecological niches, that is, where the actual interactional properties of the job (and the differentiating influences on potential contacts of those non-interactional activities which had to be performed) were equivalent. One therefore ended up by finding that equal opportunity criteria could only be established for groups of 2's, 3's, 4's and, in rare instances, up to 8.⁵ Though statistical procedures are available for such analysis, they were outside the large-number-preoccupations of the academically trained (in psychology at least), and created considerable debate.

For other jobs, and this would include salesmen in individual territories, though far more evident in supervisory and management jobs, criteria were highly underdependable. There was much use of rating scales by supervisors, composed of intuitive estimates about attitudes and performance which had no operational meaning. The problems of using more down to earth criteria, like profitability, efficiency (of plant workers), and so on, require a sophistication as to organizational influences which are not usually present in staff personnel. Of course, the individuals on the firing line were well aware of the interdependence of departments on one another, they knew how one could make the other "look bad", and they also realized that much that they were doing (and objected to) was imposed by others -- top management, engineers and the like.

Not that these blocks to useful criteria can't be overcome, but to do it requires a detailed job study of each individual, one which rarely could be obtained, even when we outlined the procedures to follow. Most curious was the frequent tendency, when productivity measures of reasonable accuracy were available, to discount them in favor of rating scales. A striking case occurred where there was a perfect inverse relationship between productivity of units of keypunchers and the ratings (by higher-ups) of their supervisors.

Rains Wallace, in a paper written long ago, speaking of the most important contribution which could be made in studies of business and industry summed up the criterion problem by saying that this was the unknown area of psychology.⁶ Present convention has made no advances on what he then said.

Nevertheless, in a number of organizations, we were able to build up job interaction patterns, summations of the interaction forms which make up the job role, by descriptive validation, i.e., by observing the degree to which all or parts of jobs were managed well or poorly (and the people involved), coincident with our validation studies on temperament. Moreover, we were able to make blindfold predictions as to success, that is, we would make a prediction, without the employment people being aware of it, and later follow up how well they did. Usually, those for whom failure was predicted were not merely bad by whatever performance criteria were available; they left of their own free will, or were fired within a few months.⁷ Coincident with these studies -- and such experiments in selection, placement and transfer as we were able to perform -- we were describing the interactional properties of many jobs quite carefully. We thus gradually established a series of job classes or types where reasonable equivalence in the cultural environment could be established, and to which we continue to add.

Once we escaped the constraints of the single summated score, we made comparisons between job profiles and the personality profile of the individual, taking into account whether the temperamental patterns for a particular type of stress were severe enough so that a high frequency of such stresses in the way the job was set up would make it impossible for the individual to adapt for long. Having established the ranges of the variables referred to earlier, we made two types of discriminations: 1) where the individual's reactions to the stress of presenting personality variables were too extreme even for consideration; and 2) though the values of some variables were within the range limits established for a particular job, to measure how great a deviation (in ranges) in the established values of the others was present. Usually, if two or more personality variables were outside the preferred ranges, failure was probable. These criteria were never treated as binding decisions on the hiring and placement personnel.

Where blindfold procedures were not used, we encouraged hiring against the measurements, since employment personnel are easily taken in by someone who is well-dressed and "well spoken", who has a college degree, or a considerable amount of prior experience in that kind of job. We had many opportunities, therefore, to check the validity of such predictions, particularly when available manpower was scarce and pressure from management was high. In some instances, as indicated earlier, persons well fitted for a job were clearly unfitted to adjust

successfully to the abrasive properties of a long time supervisor. Usually, these disparities were in areas like dominance or initiative -- too much of either -- but usually placement elsewhere was no problem.

For those whose idea of job placement is restricted to the Dictionary of Occupational Titles, and similar compilations, it should be made clear that we were only concerned with equivalences of jobs from interactional and activity observation, not by guessed-at implications of job title and assumed prior skills. Obviously, where technical skill and long experience is, in fact, required (and, very frequently, this is a myth), these factors have to be taken into account. Still, our procedure was first to establish what particular interaction forms an individual could perform, then check to see what categories of jobs this might make available and, only at this point, to evaluate the cognitive skills for differential placement. What we wanted to determine was the environmental situation in which an individual could function effectively, then sub-classify these by skills actually required by the job -- being able to read and write at the required level (and many of our adolescents do not), and so on.

Practical Implications

I have outlined this procedure, and the history of its development, primarily to illustrate how interaction analysis can be extended to the environment to which a boy is to return. In practice, each boy was evaluated and a placement plan developed. Where there was an opportunity for job placement (in not too many cases), we followed this approach, successfully, but ended up with too few cases since there were too few opportunities. This is one of the reasons behind establishing the Bronx Workshop Community Center, Workshop for Youth,⁸ the adolescent branch of the non-profit corporation, Productive Participation, Inc., which is designed to make this approach available for all kinds (and age-groups) of individuals. We hope to be able to expand its scope sufficiently so that there will be a considerable variety of jobs within the workshop. Experience there gained should facilitate placement in the types of jobs for which the individuals are best fitted.

As I have already commented, and will discuss at more length later, boys in this program were accepted at the earliest at age 14. Until they reach their 17th birthday, they were "supposed" to return to school unless parent, school guidance counselor and principal approved their dropping out from school at 16. Since the availability of even part-time jobs, and certainly regular ones, was minimal even after 18, this meant that placement could only be directed with those boys with whom we were able to stay in contact. This we tried to do for at least a two year period after they were discharged.

But the significance of this analytical procedure goes beyond employment. Determining the interactional components of the job and the quantitative values of the personality required for success, supplemented by an analysis of the types of stresses which would be

encountered in that situation, is equally applicable to other areas of the boy's environment. In the home, the primary concern we had was to see if it was possible for other interactional outlets to be developed, jobs if possible, school if not too stressful, as well as to provide informal activities at the Bronx Center, particularly in conjunction with weekend visits of several boys to the city. As we shall see, a considerable emphasis in the therapeutic process was the identification and management of the stresses which members of the family, teachers in the school, etc., produced for the boy. To the extent possible, those patterns of adjustment which had been learned in therapy would be reinforced by one of the individuals who had worked with the boy at the hospital.

For boys who were able to adjust to school and increase their store of learning, or who could attain some kind of job to which they could adjust (not that it was entirely appropriate for them) and earn money regularly, it was more possible to stabilize their total adjustment. For many others, it was clear that only the extension of the unit's staff into the community kept them reasonably able to cope. But what has to be realized is that, in such settings more than most, adjustment is differentially maintained as a function of the fit of the institutions in which they do, or are forced to, interact.

It is fashionable for psychiatrists and other professionals, far from the firing line of the communities to which these young people return, to suppose that improvement should be global, that somehow we should transform the boy into some paragon of autonomic-interactional stability, able to adapt to any and all situations. There is no evidence that we, the "normals", (including the psychoanalysts as major advocates) are able to achieve this happy state. We too have our difficulties; at times, jobs, wives or husbands, the whole world outside, seem too disturbing for us to manage. We try "instinctively", consequent on the biological necessities of achieving equilibrium, to find some ecological niche in which we can grow and flourish, rather than be stunted and disappear. From our own experience, we know how hard this is to manage and maintain, even if, through fortune, we might be reasonably clear, (intellectually) on the kind of interpersonal environment we require. The history of every one of us shows this uncertain progression (not necessarily often progress) towards individuality. Are we to expect these young people to be able to do what we cannot, when discharged from the hospital?

The Total Interactional Environment

It is only one step, then, from the concept of the role, which the interaction forms of the job require, and the more general problem of the total set of roles (each with their component interaction forms) which make it possible for the boy to adapt to living in the community. Here, of course, we were concerned even more with the temperamental

reactions, alleviated through therapy as we shall see, but still potentially reversible. If stresses at home were too great, we could not expect the thresholds to violent reaction not to shift downwards. We had to try to provide compensatory outlets in the placement plan, by which the boy could reduce the frequency and duration of stresses engendered by mother, stepfather, and all the other personalities who influenced his home and community environment. It is this program of total rehabilitation that I call "productive participation".

It might be argued, as we shall discuss later, that it is within the range of a program such as this to intervene more actively, providing various types of alternate modes of living. And so it might be in theory, in the best of all possible worlds. In reality, however, there are no half-way houses in New York City (to be accurate there is one only, recently established, which can take 15 boys); there are no adequate controls on what happens in New York City schools or in the life of the streets. More serious, there is minimal availability of jobs, any jobs, in these ghettos, not merely an absence of those which would have a real habilitative value for these young Blacks and Puerto Ricans.

What has to be done, then, and we have already found it feasible to do so, is to use interaction measurements to gain an approximate profile of the boy's community environment, particularly the personalities and temperamental difficulties of those with whom he is forced to be in immediate contact. Then, to the degree possible, as in our Workshop for Youth in the South Bronx -- the workshop community center supported by SRS -- we can begin to provide alternate organizational settings within which his adjustment can be sustained and reinforced through maximizing productive participation in as many relationships as possible.

In doing so, one further point needs to be made. When we are talking about the boy's total environment, we are not merely referring to a physical world in which there are people with whom he interacts. We are also talking about a quantitative requirement for interactional activity imposed on him by his basal circadian rhythms. In other words, each personality requires a reasonably fixed amount of interaction, a significant portion of which has to involve adequate adjustment to others.^{9,10} For a boy with high activity and initiative, for example, a world in which there are few individuals with whom he can interact because of his temperamental reactions or, often, because they are simply not available, will create the same kind of pervasive disturbance which affects the air traveller whose biological clocks are severely out of adjustment.

Since these boys find it hard to adjust, in general, and are typically loners, less so after therapy of course, their outlets for their interactional needs are deficient or depleted. Thus, as we look at the complete set of roles which are required for their total environment, we also have to ask how much performance, for how long, in that particular role, is required to stabilize their autonomic-

interactional system. Whether we call it a state of dynamic equilibrium, or homeostasis with the biologists, the essential point is that the outlets have to be there and utilized by the individual. Frequently, in all those disorders (and most dramatically in the chronic schizophrenias), the temperamental disorders, the personality deficiencies, inhibit interactional contacts from occurring.

It is easy to say that the boy, or adult, "needs to get out and see people", "he needs an active social life", and other such maxims; the problem is that our total program has to make it possible for him to do so. Hortatory statements are useless. We have to contrive his environmental setting so that these barriers are naturally overcome, not merely by the changes we are able to bring about in him, but by the situations in which he becomes involved. After all, without wanting the blanket statement to be taken literally, there is no question that a very large number of the individuals in these ghetto areas suffer from like disorders. Hence the natural confluence of neighborhood and adolescent is too often pathological, not helping. That is why the belief that there is a "community" to which to return is, as I comment on later, so misguided and mischievous. That is why the therapeutics of rehabilitation can only occur in an environment partially, at least, habituated for living.

The Hospital as a "Therapeutic" Community

After all this, it might be assumed that the hospital wards where our adolescents were housed and where they spent much of their days could be operated to maximize therapy and rehabilitation. And so they might be, if..... And the ifs are so many that in reading what follows, it may appear that I am prejudiced against residential treatment. Quite the contrary. I believe that for these types of patients, hospitalization for a few months is a necessity, providing that a highly developed and organized program is available for therapy and rehabilitation, and the staff is selected and trained to carry it out.

I have already mentioned the fact that sociopaths and psychopaths, whether adolescent or adult, are unwilling to (will not, to be accurate) avail themselves of outpatient services of any sort. Moreover, of those non-character disorder patients who do begin treatment, 30-65%, as Eiduson points out, become dropouts, usually by the fourth or fifth interview.¹¹ These percentages hold true across age, sex, ethnic group, economic level as well as source of referral or marital status. Moreover, it is important to remember that the adolescent sociopaths do not grow out of their state. There is no validity to the assumption that the maturity of adulthood, in some mysterious way, will make it unnecessary to intervene (the sooner, the better).

I have already commented on the present fashion to do away with the mental hospitals and, certainly, as they are now operated, the grass seems greener anywhere you look. But since these individuals with chronic autonomic-interaction syndromes are not otherwise manageable, leaving them on "the street" makes far worse the crisis in what is called law and order -- the marked increase in the performance of criminal acts in one form or another. Hence, only commitment can adequately implement the therapy-rehabilitation programs suited for each type of temperamental disorder. But this must be limited and the program intensive, unless it becomes possible to substitute (and multiply) such fledgling organizations as the Workshop for Youth to cover the needs of the adolescents, with some equivalent for older sociopaths. And even then, for those who are extremely violent, taking off the stresses by separation from the community is a necessary precursor of improvement.

I hope it will also be realized that my subtitle is ironic, not merely as far as what we were able to do to shift from environmental pathologies to therapeutics in the adolescent wards of Rockland State Hospital. I also intend to emphasize that the therapeutic community or the team approach are, in fact, very often pathological in their impacts on patients and on staff. Eiduson suggests that the evidence indicates (but is not adequate to demonstrate conclusively) that the team approach produces a higher dropout rate than other therapeutic approaches. The therapeutic community, the "welding" together of staff made up of many professionals and those without, may intrigue the interactionally naive, but such efforts bear the same relation to therapy and rehabilitation as hazing the freshman in a college fraternity or staging a colloquium on the problems of the world between articulate and hypostatized representatives of the sciences, the arts, the humanities and the so-called social sciences.

At Rockland, in spite of paper efforts, now accelerating, the recalcitrance of the organizational structure (not necessarily the individuals) to a common program was typical and automatic. This was made worse by the rigidities of the professionals who were concerned both with their hierarchical position (and presumed status deriving therefrom) and from their "trade union mentality", the unwillingness to do something that "wasn't their job". Since, in a state hospital, they were small in numbers, these barriers made the situation worse.

A hospital, whether it be a general hospital or a state institution for the mentally ill, runs on a 24-hour, seven days a week basis. To do so, the wards, staffed by attendants, had three shifts: 8:00 a.m. to 3:30 p.m., 3:30 - 12:00 midnight, and 12:00 p.m. to 8:30 a.m. Although each ward, whether it has 25 patients or 75, has a charge attendant, technically in command, his influence rarely covered more than the day shift on which he served. Each adolescent ward was supposed to have 13 attendants assigned to it, but this goal was never met. During the entire time of our program, each ward had 10

men for the 24-hour round. When it is realized that, with vacations, leaves, weekends and holidays, only 60% of the time is spent at work, 6 men spread over the 24 hour seven day week, divided into the three shifts, provides little manpower for ward programs, if such are attempted, let alone for custodial care.

Apart from the psychiatrist assigned to the building, sometimes supplemented by a resident being rotated for a few months to receive his "training" on adolescents, there was one R.N. who acted as building supervisor, to whom the attendants directly reported. School classrooms were in another building, with its teachers an independent unit. In addition, there were available the part-time services of a social worker, one or two part-time recreation staff and, very infrequently, a psychologist to administer IQ tests, (the WISC ordinarily). Occupational therapy staff did not work with the older adolescents. When we began the workshop program, first on one ward, then on two, attendants volunteered to run them.

Although the attendants, as the saying is, run the hospital, i.e., they are the only ones with direct contact with the patients; they are poorly paid; most have other jobs to which they moonlight; they have no training in any real sense. For many, being an attendant is only another job to supplement their moonlighting pay, not vice versa. In addition, screening, selection and placement are carried out perfunctorily. Many of the attendants, through lack of personnel department concern, are more violent, though adult, than those they are expected to help. Often they have criminal records, from other states, not checked by present practice. Moreover, it seems almost impossible to eliminate the vicious, the perverts, the lazy and the unreliable because of their Civil Service status and the major, documented effort required to "bring charges" against the incompetent or unfit. Psychiatrists, burdened with paper work in any case, rarely brought themselves to build a written dossier which is, of course, needed. They resent the fact that their reasons for trying to fire an employee are questioned. Beyond that, everyone had had experiences where the Civil Service Commission had over-ruled a decision and forced the hospital to take back a highly incompetent and apparently appropriately terminated employee. This reinforced the sense of helplessness.

As a consequence, wards of adolescents were liable to become bedlam, at least at night and on weekends. The proportion of attendants available was usually small and plagued by absenteeism, psychiatrists were not reachable, except in rare instances; management of the boys too frequently involved the use of drugs as disciplinary action, together with seclusion in a room for long periods (contrary to the law) and, of course, the surreptitious acts of physical punishment. In spite of this constant emphasis on rudimentary custodial living, there were many attendants who were, surprisingly, devoted to what they were doing.

The attendants blamed their frustrations at the lack of program, and the employment of others who clearly were not interested in doing their job, on the system, on the inadequacies of the various psychiatrists occupying administrative positions in the hospital and, above all, on the central administration of the Department of Mental Hygiene, i.e., on "Albany". "No one knew about their problems and no one cared," and, most important, they believed that whatever was said was just a way of covering up. (This does not mean that I think these firmly held beliefs were always reality, but the rigidities of bureaucracy, the vagaries of legislative appropriations, and the straightjacket of Civil Service grades and requirements provided plenty of support for the attendants' sense of helplessness and hopelessness.)

In our case, we had intermittent intervals where something could be done about the environment of our wards, but we were engaged in a constant battle to introduce and maintain a therapeutic-rehabilitative system in an institution where the psychiatric hierarchy had the last word. Too frequently, it was an uninterested and uninformed one. Whatever we did, or tried to do, was usually regarded as just another form of keeping the patients occupied. With only one exception, unfortunately ended by his own rebellion at the inadequacies of the system, the psychiatrists were completely uninterested in therapy or rehabilitation; they evaluated attendants and supervisors by the "trouble" they permitted; they, too, moonlighted to a private practice and went through the motions while on the job.

As a result, it was almost impossible to approach the potential which a properly run, carefully scheduled residential center can achieve. Rehabilitation was a term never used; the important thing was to keep the boys tranquil until they could be discharged from the hospital, no matter how. Except in rare cases, treatment was thought to be equivalent to prescribing psychoactive drugs and waiting for "improvement" to occur magically. Desultory efforts at "group therapy" were occasionally started, without regard for the specific therapeutic program prescribed by us for the boy, but they were soon abandoned. In short, our own efforts were treated as an appendage and not as an integral part of a functioning medical universe which, of course, in state mental hospitals, is almost universally non-existent throughout the country.

To overcome these obstacles, rehabilitation (and its associated therapy) would have to be seen as central, not peripheral. As in physical medicine and in our own program, the entire unit would be organized for maximum effort from the moment the patient arrives at the hospital. Whether a physician or psychiatrist or non-medical rehabilitation specialist was in charge, he would have to be trained in the rehabilitation point of view; all individuals would have clearly-defined roles and no one would be forced into the position, as the nurse-supervisors and attendants were, of only being regarded

as custodial personnel. In such a unit, one would need direct control over staff, and would then be able to weed out those who sleep on the job, who get drunk, who beat up the kids, or who rarely turn up. One would also need to eliminate the rigidities of the professionals traditionally assigned to a hospital (often of little use) or to replace them if they, too, were unable to learn how to do new things. In other words, to achieve a truly therapeutic-rehabilitation residential unit, its personnel constituents and organizational binds would have to be subordinated to the requirements of carrying out an on-going process, tailored to the needs of each individual adolescent. Not too hard to achieve? But again, this is a "real world!"¹²

Programmed Interaction Therapy

In concerning ourselves with the treatment and rehabilitation of any individual, therefore, we have to define the process by which we know the kind of environmental situation in which he interacts and the ways in which his individuality, that combination of personality and temperament characteristics, affects, and is affected by, his interactional relationships. For this is what is meant by diagnosis, diagnosis which recognizes that personality and environment are intricately intermixed, that the ecological niche of every person is special to his biological properties. Hence, no matter what the boy's symptoms appear to be or, for that matter, his official psychiatric diagnosis, our point of departure is the measured values of the interaction variables provided by computer analysis of the standard interview.

We make our own diagnosis based on those values. This means that we examine the data for each separate temperamental disorder which combine to make up his chronic autonomic-interactional syndrome. In effect, this can be regarded as the resultant of the transients he manifests when entrainment of his basic rhythms takes place, entrainment consisting of an interference with his fundamental rhythms through the coupling to a different beat which repeatedly will produce instances of stress¹ as each rhythm tries to obtain preponderance.

Though each of the temperamental disorders (transients), if severe enough, can constitute a single syndrome, most of the patients present significant evidence of several, each of which is elicited by its particular stress pattern of asynchrony. Though we could take refuge in the psychiatric catch-all of "mixed" to indicate the presence of several such disorders, this would get us nowhere. What we have to do is to identify each (no great task since the diagnostic interview is designed to do just that) and to determine from the measured values how severe the reaction is.

We have to keep in mind, however, that there are definite effects of prior stresses elicited in the interview on those that follow, and develop our mathematical tools to separate them. Often this may be manageable through the design of the recovery period, that is, we can, within practical limits, extend the time to be allotted and the number of units we can "wait for" to see whether the values return, exponentially, to the base. Often this is not possible because the reaction was too severe or because insufficient time was taken. Further, in our earliest work, based on our experience of administering many such interviews to normals in business (and then to chronic schizophrenics, almost always relatively low in activity), too little time was taken (and needed) to eliminate carry-over to the next stress period of the interview. With the interview control system described earlier, this is no longer a problem. Schedules have now been worked out for the management of extreme cases.

It should be evident, then, that this diagnostic process is almost exactly the reverse of the taxonomic procedures of psychiatry (as in DSM II). We do not begin by affixing a broad, all-encompassing label, e.g., schizophrenia or character disorder and then, imitating the classificatory schemes of Cuvier and Linnaeus (phylum, class, order, family, genus, species, sub-species), tag on qualifiers of presumably greater specificity. We identify each component temperamental disorder (transient reaction to stress) and combine them into a profile, a cluster, or a set of parametric equations. Which of these we use depends on the level of analysis demanded by the practical requirements of the therapist (and the computer technology available to him). For precise differentiation of the mutual relations of these various syndromes, mathematical analysis enables us to describe the coupled relaxation oscillators which make up the interaction rhythms. We can then compute the path of the transients, obtaining estimates of the degree of deviation in the slope of the curves introduced by the occurrence of stress before the preceding transient had run its course (returned to basal levels).

Remember that the programmed diagnostic interview introduces and repeats stresses of fixed durations and frequencies and thus elicits a "pure culture" so to speak, of the particular disorder and its severity. In everyday life, and in non-programmed interview situations, what we observe in a person is what appears to be a relatively randomized distribution (over time) of the various stresses in various degrees of magnitude, interspersed with intervals of synchronous interaction. Each of these makes its contribution to autonomic-interactional reactions. Only as these cumulate, and particular types differentially increase in magnitude, do we begin to approach some simulacrum of a "pure culture". In fact, however, the presenting situation is often very mixed. It is no wonder that therapists, proceeding empirically, rarely have been able to identify a clear picture.

But we have the remarkable advantage of being able to disentangle the component disorders and determine their severity quantitatively. We thus can make a reasonable estimate of the dimensions of the programmed interaction therapy schedule we shall need to use for each disorder and, in following such a schedule, we can determine immediately from the measured values of the therapeutic sessions whether and to what extent it may require modification. Often, for example, it appears obvious that even the minimal stress amounts used in the diagnostic process are too great to utilize at the beginning. Thus we may reduce the number of times a particular asynchronous pattern is to be introduced; we may also shorten the time durations of its component intervals. The reverse may also be the case, usually when there is prior evidence, from that part of the day before the interview, that serious stresses had been encountered and severe reactions reported. But this feedback process enables us to modify the schedule of therapy immediately. It rarely happens that such shifts in program need to be done more than once (in starting off).

However, in following the schedule it may, and often does, become evident that values are shifting towards the normal ranges more rapidly than expected or, conversely, that a plateau has been reached and minor shifts in intensity will be necessary to move the patient on. It is, of course, also possible that nothing happens, i.e., values do not change or actually take a downward turn. So far, in our experience where we have been able to maintain a regular schedule, this has proved to be extremely rare. Ordinarily, what we find is that we have begun to work with a particular stress pattern which is secondary in magnitude, again because of prior situations which affect the values of the diagnostic interview. We then have to shift to another program.

In the early stages of our work with programmed interaction therapy, we had to make guesstimates, granted they were based on reliable and quantitative data, as to which of several disorders should be worked on first. Sometimes the choice was obvious. If the boy was hostile, extremely shy or withdrawn or, conversely, had an extreme "pretentious" push of speech, we had to work with these patterns and improve his performance until we could determine his basal values with reasonable confidence. Clearly, if a patient doesn't talk (however we might label it), one cannot work on the initiative and dominance variables and the disorders associated with them. When we came to simulating the diagnostic interview, in beginning its sequence of comparisons, the computer program was designed to call immediately for what we labelled a "sustained conversation" program, and stopped its analysis at that point. Only after these severe initial transients were dealt with would we take on the next variable, which might, in fact, be of greater importance.²

Types of Therapeutic Schedules for Specific Disorders

I do not want the reader to get the impression that this development of programmed interaction therapy sprang, like Athena, full-grown, from our heads. In fact, though the direction we were taking had been reasonably clear for many years, we began by using a relatively limited repertoire of therapeutic patterns. Gradually we have been able to refine them and make them much more selective. In other words, at the beginning, we would recognize that a boy had real difficulties in adjusting to not getting a response from someone to whom he had just spoken (rejection is a more affect-laden and perhaps "communicative" word). Though it was quite evident, as the tables in Chapter 4 indicate, and as we had validated in our work with "normals" in business and government organizations, that there were very different ways of reacting, each of which constituted a disorder of its own, we did not design a single therapeutic program for each (which we now have done for many of the disorders); we prepared our schedule using the model of the non-response stress patterning of the diagnostic interview and varied the frequencies and durations -- of the dosage, so to speak.

To illustrate: Let us take three different reaction patterns to non-response. 1) The individual is overly quick to react when he doesn't get a response, he initiates repeatedly, and his waiting time before he does so becomes shorter and shorter; 2) Completely the opposite are those individuals who become slower and slower to take the initiative. Usually, after the second or third failure by the interviewer to respond, they become mute. A more severe state occurs if the individuals become markedly latent when the interviewer initiates to them (prods); 3) By way of contrast are those persons who talk longer and longer with a press of speech when they have not gotten an immediate response. These three types in no sense exhaust the variations of the non-response disorders. They are, of course, further complicated by the transients (temperamental reactions) occurring after the stress is ended, which are usually violent and prolonged.

In the early stages of our treatment program, we repeated the schedule of stresses, varied in terms of the magnitude of stress we believed each boy could handle, endeavouring to get him to learn how to shift from these reaction patterns by instructing him on how to react. In other words, for the boys who became quicker and quicker, initiating briefly with great rapidity, we tried to habituate them to the stress and to train them to learn to wait, to slow down their tendency to accelerate. In the second case, we, of course, tried to get them to reduce the length of their latencies and to initiate to the interviewer. In the last case, the emphasis was on cutting down on the length of their speeches so that they gave the other person an opportunity to respond.

But this instructional program, combined with scheduled increases in the particular stress pattern to which they reacted, was not a mere matter of repeating the instructions before each session. After it became evident that the boy was beginning to make progress in the direction outlined, the interviewer would throw him a series of "curves", sometimes telling him that, somewhere in the sequence during the interview, he wouldn't respond; more often, not telling him at all to see how he managed. The interviews were so designed that they might continue for the stated period by adjustment alone, or the stress variations could be introduced at various points in the sequence. Thus he might expect the no-response, but not where it would occur, or not expect it, depending on the program plan. Similar procedures were used in the group sessions.

Most of our therapy programs were of this order, varied depending on the type of stress and its severity. Only towards the end (not the planned end, but the enforced end by the Director of the Hospital), did we begin to use programs which varied the interactional patterns of the interviewer, as a consequence escalating shifts in the reaction patterns of the boy. Ordinarily, these were made more complex

by changes in other variables (attempted dominance by the boy and sustained action, persistence, to the programmed length of the unit by the interviewer).

Though the quantitative values of the variables differ (for the boy and for the schedule), we can illustrate by saying that, in Type 1, the durations of the interviewer's response would increase; this might be followed by a lagged increase in the durations of the non-response, the purpose being to slow down the tempo which quick and short responses enforce and to increase the period when he is to remain silent (and presumably listen). In Type 2, the length of the interviewer's non-response is cut down and only gradually increased; and in Type 3, briefly, the interviewer alternates a no-response interval with an immediate response and, in each, responds for a considerably longer interval. He thus shifts the individual to "listening", but does not repeat the stress sequentially in order to reduce its build up. In all these situations where longer responses are programmed, the interviewer is instructed to continue to the end, thus maintaining control through dominance if the boy should interrupt and try to take over.

It will be evident to the reader that there are a large number of possible quantitative variations, not merely for this stress pattern but for all others. This is not the place to try to describe the possible combinations. The point, however, is to illustrate the fact that the range of the designs which can be used in treatment is very large. Moreover, as one examines the constituent temperamental disorders outlined in Chapter 4, it is evident that the interaction programs required for each can be very considerably elaborated. The process of designing therapeutic interaction forms, therefore, depends on our estimate of what variables need to be altered, and in what order. Since these are rhythms (of two people) which are being coupled, the precision of the fit will determine the success of the therapy.

What we are doing, however, is not like fitting a jigsaw puzzle together, though like the puzzle, the rhythms have to fit. What we actually have to do is to solve the equations which these coupled relaxation oscillators create for us, knowing that the solution is specific for that individual though generalizable to others with similar values of the parameters of their interaction variables. Obviously, in the early stages of anything, one has to operate to a large extent by cut and try. We knew the general principles which were at work, from long experience with interaction measurements. We were guided by our knowledge of the underlying physiological mechanisms which make the individual a dynamic system.

In other words, we can reduce complexity, as I have elsewhere pointed out, by recognizing that these adrenergic and cholinergic patterns, imposed on the basic rhythms of the individual, are less numerous in the associated fixed action sequences they elicit than the mere listing of all the operationally definable variables

would suggest.³ We are, in effect, dealing with patterns or configurations of these variables. The variations they present are sufficiently numerous, particularly in combinations of the temperamental reactions (and disorders), to make the concept of individuality of each person meaningful and operationally definable. Nevertheless, they present uniformities -- mathematically definable similitudes -- so that types of personality and their temperamental variegations fall within limits, dissimilar in some of the parametric values, but homogeneous for all that.

Computer Simulation For Treatment Decision⁴

I have already mentioned that a major step in our development was to utilize computer simulation of the analytical process which a person, trained in the evaluation of the results of programmed interaction diagnostic interviews, actually goes through in making his decisions about the type of programmed therapy to be employed in a particular case. Before we began this process, we used the population distributions of the values of the variables described in Chapter 4, determining the extreme reaction patterns, and proceeding accordingly. In addition, as commented on in Chapter 3, we had to develop a simulation program for the diagnostic interview, so that we could pinpoint any deviations by the interviewer from the quantitative standards embodied in the Interview (Interaction) Control Computer System. These were evaluated quantitatively in terms of their possible effects on the interview measurements; if too major, the interview would not be used for analysis.

Assuming that the interview was done correctly, the next step was to develop a simulation program which, in effect, compares the measured values of the patient's interaction variables, unit by unit, with the ranges illustrated in the charts in Chapter 4. Where the values fall outside normal ranges (into the extreme categories), the computer identifies the variable involved and assigns weights on the basis of the severity of the deviation. The program then continues by cumulating the deviation weights by type of deviation and assigns priority (of treatment, by numerical order and, in so doing, indicates the particular schedule to be used. In an early check of the utility of the simulation procedure, 10 "normals" were compared with 10 sociopaths to see the degree of separation obtained. Two normals edged into the outside limits of the sociopathic range; one sociopath moved the other way. ($t = 4.32$, significant below the .01 level). Comparing choices by the therapists, after they had started the therapeutic program with what the computer program yielded, there was only one disagreement, a case where the computer did not recommend a program.⁵

Such concordances, though encouraging, are only suggestive, since the weighting system itself was, by necessity, overly simplified. The only weights used were 1, 2, and 4, and the amount of the deviation was computed from the mean values of the periods. Since the transients themselves are exponentials, and since the simple ordinality of the weights cannot be a precise measure of the actual functions which are being compared, the simulation had, by necessity, to be regarded as a rough tool, but sufficiently usable so that with minor modifications it is practical. In these planned changes, the point score of the deviations can be made to select programs differentially for a particular subcategory of no-response reaction patterns, as commented on earlier. In addition, since it is simple, it can be easily used even without a computer. I have summarized the steps in the original analysis and the flow charts, both for this program and the initial Interviewer Evaluation Analysis in Appendix 1. I also include a simple routine for comparing one treatment session with the next (using the weights just mentioned), which provides one means of evaluating improvement.

Although this simulation model can be modified for interaction therapy, and used by those who would find more complex procedures (parametric equations) beyond the capabilities of the computer resources they have available, my primary concern has to be with these more sophisticated methods of analysis. After all, they yield much more accurate predictions by making it possible to utilize all the information which the sequence of measurements contains. But, in this account of past work, they are not relevant to our discussion. What I am trying to do here is to describe what we did, and its results and implications. Also, I think the process which programmed interaction therapy sets in motion is probably more easily understood at this more simple level of description. It is sufficient to see how it differs from other approaches.

The Contrast With Behavior Therapy or Behavior Modification

I am often asked to discuss the differences between programmed interaction therapy and behavior therapy or behavior modification. Of the first, I point out that it is primarily concerned with the elimination of symptoms by classical conditioning (Wolpe), using Pavlovian procedures, or it tries to establish a sequence of response using the operant conditioning approach of Skinner by positive or negative reinforcement.⁶ Each response elicited by some stimulus is likely to be reinforced if the response is repeated; one can obtain responses by using some (almost any) stimulus, so designed that each response is rewarded -- with a token, a piece of candy, coin of the realm, even a "dirty picture". One can, of course, use negative reinforcers -- shock from an electric circuit, chemicals which induce vomiting, or less

drastic procedures. Hopefully, these processes result (according to the therapist's plan) either in extinction of the habit or reaction pattern or symptom, or the establishment of habitual responses or patterns which are "desired" (though they will continue to need reinforcement).

Wolpe, in concerning himself with the eradication (extinction) of symptoms, e.g., phobias, odd behaviors and the like, talks of desensitization to the symptom as stimulus. And, of course, the same term can be, and is, used to describe the alternate operant conditioning approach. But desensitization, as we define it, is not concerned with the elimination of the anxiety produced by a symptom. Nor does it mean the reinforcement of an alternate response, with coincident non-reinforcement of the anxiety-producing response, which assumes the stimulus eliciting one response is opposed or unassociated with the others. Where complex patterns are involved, behavior modification breaks each element down into a long "chain" of these stimulus-response stages. One by one, they are each processed through the conditioning routine, a very time-consuming process.

Desensitization in the interactional case is unrelated to symptoms. It is not, by any ordinary interpretation, a simple stimulus-response situation. At the very beginning is the massive evidence now available for the basic hypothesis that interaction is built up on the endogenous rhythms of the body of which the activity of the skeletal muscles is the rhythm immediately observable. And these rhythms, whether they are fast or circadian (approximately 24-hours), are integrally related with other biochemical and physiological rhythms. They are controlled by the autonomic nervous system (in the postulated master-clock) and, of course, are shifted by it under stress. Hence we are here dealing with what used to be called spontaneous activity; stimulus-response phenomena are entirely secondary. By contrast, the crusaders of behavior modification and therapy, whether they be Wolpe, Eysenck, Skinner, believe in the myth that the organism does nothing unless a stimulus comes along, setting off a response.⁷ It is on such simplistics that Skinner can expatiate grandly about remaking each individual to his preferred designs.⁸

I do not want it to be thought that learning does not go on, quite the contrary, but learning is a far more complex phenomenon than Skinner is able to contemplate. When programmed interaction therapy brings about an increase in the threshold to stress (so desensitizing the individual), this does not mean that, by repeated exposure, extinction takes place. Rather it means that the boy learns how to modify his rhythms to fit those of the other whose particular degree of asynchrony is disturbing. It is far more of a cybernetic process (though this is also too simple an explanation) than behavior modification.

Of course, reinforcement does take place, but the reinforcement is primarily a function of the meshing, the synchronizing of the rhythms, and not the consequence of a reward (in any relevant or accepted sense). Thus other elements of the learning process come into play, in particular, that of imitation, not, as is often thought, by watching another alone, rather by the learning of a complex interaction form (or role) through performance. Most studies of imitation that are reported are done on the symbolic level. But when we are concerned with the acquisition of patterned actions or interaction, we learn by doing, though, of course, we may get clues by watching skilled performers. Still we all know that watching Willy Mays hit a baseball or Jack Niklaus or Arnold Palmer drive a golf ball off the tee will never make us their equivalent by imitating what we think we saw; this applies even more to interaction.

Though the use of the term gestalt (configuration) is not exactly applicable, nevertheless the learning process by which individuals modify their reaction patterns, thereby becoming less vulnerable to stress, does involve the acquisition of interaction forms which fit the limits of their component personality variables. And like the musical form itself, to which it is analogous, we are dealing with a complex set of rhythms which can only be manifested in duet, trio, quartet, or even choral composition, usually all, but not coincidentally. And the idea of the totality, the gestalt in musical terms, however the form is filtered through the personality, has a melodic structure which, hopefully, becomes more truly melodic as the storms of autonomic-interactional reactions are alleviated.

And at the last, by way of contrast, the ratio schedules of operant conditioning in behavior modification are not equivalent to programmed interaction patterns. There have been a few rare cases where they might be said to approach one another but, in general, they do not deal with operationally defined measurements. They assume that highly repetitive regular (or variably regular) schedules of reinforcement define the interactional process since, in much behavior modification therapy, various aspects of behavior are singled out for conditioning. The fact that interactional rhythms present far more complex phenomena makes these approaches peripheral to programmed interaction therapy. It is conceivable that they could be so used, but it is doubtful that they are sufficiently adaptable to be of much practical help in designing programs for interaction therapy.

Most important, however elaborately contrived behavior modification turns out to be, there is no systematic means by which it controls the effects of the total situation and, above all, the influence of the personality of the experimenter or therapist. It purports to achieve its effects by its operant scheduling but, as various writers have pointed out, the nature of the relationship between patient and therapist can be an overriding force. It is common to speak of the placebo effect,

the rock on which so many drug experiments founder, where a very high percentage of patients improve even though the capsule they take, however much it is equivalent in appearance, taste, etc., has no active substance in it. Since the Western Electric studies, the Hawthorne effect has become a pejorative in the literature. The interactional situation in which the girls assembling relays found themselves, singled out, visited by the brass, treated specially, biased the experiments. But experiments continue on their way, hoping to neutralize these effects of social interaction rather than to address themselves directly to what, after all, is one of the most powerful influences in therapy and rehabilitation, the interaction effect.⁹

Behavioral Changes Associated with Interaction Therapy

Although the quantitative and mathematical analysis of the data is to appear in a technical monograph, a verbal account of what took place during the treatment program for two boys described in Chapter 2 will serve to illustrate the changes which took place. In reading these, it should be remembered that therapy (in the interaction sense) consists of a series of precise experiments which are designed in advance and the program set up on the control computer which activates the visual display system. These experiments are intended to alter the temperamental reaction patterns, and their underlying personality substrates, in predetermined ways. What we are doing, therefore, is to carry on clinical investigation, within a theoretical and mathematical framework, enabling the clinician to transform his acute observations (and intuitions, if you like) into quantitative programs for the computer by which they are made explicit and operational. As is sometimes forgotten, this is the natural course of clinical investigations. Although the criteria on which decisions are made and evaluation conducted are rarely operational at the beginning, it is the creative imagination which transforms them into objective techniques of measurement.

In discussing the histories, so to speak, of these young people, we begin, not merely with the evidence, such as it is, of prior events before they came to our program, but with the results of the programmed diagnostic interview which yield the data on the basis of which therapy is planned. After each programmed session, the changes, if any, are evaluated to determine whether improvement is occurring, whether changes are needed in what we have planned on the basis of the results so far obtained and, then, we begin the process of developing the plan for total rehabilitation by determining the potentials of the individual for productive participation in the community setting to which he is to return.

Thus when we admitted the Puerto Rican boy, E.R. to our program, whose history is briefly summarized, our measurements told us he was extremely shy, consistently hesitant and latent (= depressed), unaggressive, unable to dominate at all, with low

initiative and tending to have the erratic durations (high variability of his rhythms) which we have identified as characteristically occurring in chronic and acute schizophrenics. By contrast, however, the consistent latency length, even during the periods of stress, suggested that "depression" was a more probable component.¹⁰ Only after being dominated, did these increase significantly. When he was dominated on the ward, this reaction pattern would be set off. He would act violently but not aggressively to others and, at the same time, would not respond when a staff member tried to get him up off the floor, for example, on which he would roll and scream.

Treatment began by prescribing (and practicing) the measurements needed to counteract his reactions and vulnerability to dominance. As he learned how to reciprocate, to dominate in turn, the severe reactions disappeared. After a series of sessions in dominance training, when he had reached sufficient stability no longer to have these "tantrum-like" patterns, his program was shifted to encouraging initiative and reduction of his shyness which also followed.

Coincident with this programmed interaction training, and a less programmed participation with three other boys having the same treatment program with the therapist (training counselor), we had already begun to try to determine what potentials he had for placement. The grandmother was willing to take him back home, but unless he established other relationships, we felt he might regress. Since he had been able to take part in Catholic Church programs available for young people at the hospital (if they could get along without disturbance) we were able to begin, by home visits, his transition to equivalent peer groups in the neighborhood church who, though Puerto Rican, spoke English. He thus began to develop an active role as a participant in church-oriented activities for teenagers. He even persuaded his grandmother to join a club for Spanish-speaking senior citizens so that both boy and grandmother had similar institutional identifications, though in different language groups.

Equivalent processes went on in different forms for other boys, many of whom remained in contact with us through our center in the South Bronx and our consistent policy of using the same staff member (or at least one of them, given inevitable turnover) who had worked with the boy at the hospital. Thus "continuity of care", in our case, is not an institutional commitment; it is a personal commitment to the boy of the individual training counselor (who also worked as community agent, replacing the need for social workers). In addition, by trying to arrange meeting places and sources of contact, whether in emergency or not, the relationship of the boy to the staff member as well as to other boys who had been in the program was significantly stabilized.

Interaction Training Group Sessions

The core of the treatment-rehabilitation process is the success with which the boy learns to manage the interactional dynamics of his relationships with another person. He must do this because almost all his interaction takes place in pair events, even when he is with several people. Hence the design of programmed interaction therapy is intended to expose him to repeated administrations of all the varieties of stress which are disturbing for him. These he has met and will continue to meet in the people with whom he interacts, since it is his relationships to these individuals which are sustained, repetitive, and thus capable of reestablishing the illness.

Yet most of his life is, of course, spent with others present. Thus we have to learn to observe his interactions and to distinguish operationally the discrete sequence of events in which he takes part. In so doing, we see that a sequence of pair events, with one and then another person, may be interspersed with events in which several of these persons interact simultaneously.¹ These are usually brief, initiated by one person, with the others responding. They take all kinds of cultural forms, from the order of a drill sergeant to the comment which produces laughter. They are called, technically, group or set events.² Their significance for the individual and for the structure of groups we shall touch on in the following two chapters.³

As most of us are aware, the "group", or "group involvement or participation", has become a high abstraction, a reification like the "community" about which we commented earlier. In fact, what goes on is no single influence. It is far more complex when reduced operationally to its component interactional events. The present tendency, particularly in various forms of "group therapy", is to assume that groups, whether they involve the informal contacts of the street corner or the structured patterns of the classroom or the job, provide a different and all-pervasive environment, like the waters of the ocean which surround a fish. This is a fallacy. Groups are made up of individual personalities with all the potentially lethal temperamental patterns they possess. Events may be short, the tempo fast, interspersed with set events. Two or more persons may cause similar stresses; thus their effects can cumulate more rapidly into violence. On the other hand, just the presence of disparate or complementary personalities may alleviate the stress which prolonged exposure to one person might induce.

If we keep in mind the data recorded by measuring the interaction of the boy and the therapist in what we have called an interview setting, we can utilize carefully constituted groups to facilitate this process. We cannot, however, say that it would not be possible for a therapist to work only with groups of individuals

and obtain equivalent results to those obtained in our total programs. We did not try it. The reason we did not was that we believe that it is crucial to expedite treatment and rehabilitation, not to conduct it at a leisurely pace. The longer therapy takes, the more it has to work against habituation to the state to which the illness has reached. Although there were times when, due to shortage of personnel (and funds), we had to reduce the frequency of these therapy and rehabilitation sessions, we recognized that this would make it harder to get the results we wanted. Hence we tried to provide the elements of the program as often as we could, with therapy (and the group sessions to be described), preferably three times a week; workshop and classroom sessions were conducted five consecutive days during the week.

We do not believe, by the way, that group sessions are the treatment of choice for the character disorders, as so many advocate today. We suspect that the enthusiasm for so doing derives from the ineffectiveness of most of the psychiatric procedures used with the single individual, apart from the "attractiveness" (and efficiency) of conducting therapeutic sessions for a group, usually once a week. Beyond that, however, if the "mix" of the personalities chosen is sufficiently great, there is a good chance that more severe (transference) reactions will take place, enabling the therapist to identify what his diagnostic process does not tell him. It should be added that our own experience indicates that such group "confrontation" or "role playing" sessions are contraindicated for many of those classified under the traditional labels of personality and character disorders.

Validity studies of group therapy, given all the problems of defining an appropriate criterion of success, have been remarkably unencouraging, though there is no doubt, as some writers point out, that the staff participating finds it beneficial to them, if not to the patient.⁴ Without elaborating in any detail, it is clear that there are two major hazards to patient improvement.

First, the therapist does not follow an operationally defined role, as in the procedures we use in programmed interaction therapy. His patterns are those congenial to his personality and, no matter what his training, he is liable to find that his own temperamental reactions can be set off (counter-transference) by some of the individuals present. Since he is unaware of the particular reaction patterns of each patient, except as they manifest themselves in the course of the sessions, he does not know how to target in on the pattern and handle it effectively.

Second, since the mix of the patients selected for such groups is determined primarily by the taxonomic classification of symptomatology, progress, whether fast or slow, is an accident of the mix and cannot be replicated in any accurate fashion. One has only to watch such sessions to see how often the group therapist is caught off base by the interactional dynamics. True, with experience he may learn to keep himself under control and prevent his mask from

slipping, but he cannot avoid being at the mercy of what appear to be fortuitous shifts in the interaction process. Only belief in its efficiency can keep him at it and, as has been often remarked, many therapists, after a few trials, prefer to delegate group therapy sessions to the para-professionals.

Extensions of Programmed Interaction Therapy in Groups

Although it might seem appropriate to call the group sessions to be described, "programmed interaction group therapy", they differ in the degree of programming which so far we have been able to manage. The therapist, group leader, training counselor, or whatever we might call him, uses non-directive language except in the didactic sequences where he outlines the elements of the interaction patterns. He is given greater latitude in the durations and frequencies of his response units and in his use of the types of stresses with which the boy is struggling. Groups consisted of four, at the most five, boys; the therapist may or may not have had one or more of these particular boys as part of his case load. Boys were chosen for a group on the basis of the data obtained in the diagnostic interview. They all manifested the same temperamental disorder (they may have others, of course), and this disorder was being treated at the time with the same interactional program design. Hopefully, groups were started after each boy had had at least two or three treatment sessions, but this could not always be managed under the conditions in which we worked.

As mentioned earlier, we did not receive delivery of the group interaction recorder until the program had had to be terminated. (In fairness, we did not have the funds to order early enough.) Hence, apart from any notes which the therapist himself kept, observations were made throughout the session by another therapist, when available, and this could not always be done. The group interaction recorder is designed not merely to record the interaction itself, but it is also adaptable for coincident observations of defined activity components -- in a classroom, the workshop or, as here, in identifying the non-interaction (idiosyncratic) behavior, posture, location and the like as well as those intervals when interaction forms are prescribed in what has loosely been called role playing.*

*The Group Recording System ORL 345 is designed to measure the behavior of a maximum of 10 subjects, with a capacity to differentiate among 15 states or conditions for each subject being observed. This can be increased to a maximum of 42 conditions. The system consists of up to 5 manually-operated keyboxes, each with two keyboards of 45 keys or less, depending upon the investigator's needs. Keyboxes are linked to a specially designed timing unit and paper-tape recorder. Each time a key is depressed or released indicating a change in the state of condition of one subject, the states or conditions of all subjects are recorded or punched. A typewriter keyboard is attached to the paper-tape punch (or magnetic tape recorder) so that identification material, comments, additions or corrections can be made by the investigator at the beginning or end of an experimental session.

Linked to the visual display system of the interview control computer, much tighter control on the interaction patterns used by the group "leader" can be obtained, and this we are now planning to do in the Bronx.

For most boys who took part in these sessions, an eight session program was designed. In cases where sufficient progress was not being made in individual therapy (and in the group), one further sequence of eight sessions was prescribed which consisted essentially of the repetition of the second two phases of the First Sequence. It must be remembered that, where possible, these were scheduled three times a week; in any case, at least twice a week. Each session was intended to last for at least 45 minutes and, ordinarily, was stopped at that point, unless the momentum of a particular boy (or boys) was such that a few interaction units had to occur before the leader could terminate the session with a brief reference to the session to follow.

The first phase of the sequence, consisting of two sessions, was devoted to a discussion of the interaction patterns and how they affected the individual's getting along at the hospital and home. As one variable was described and examples given, the leader would then ask each boy in turn what he did in similar situations. Since he already knew, from the diagnostic interview and from the interactional history, what these reaction patterns were, it was easy to get down to actual events, particularly since the other boys were encouraged to comment on the reality of what the boy being questioned had just said. The second session continued this discussion of how each boy behaved and then the training counselor (leader) described each boy's treatment program so that they all understood the similarities of their reaction patterns and what the individual sessions were trying to accomplish. He also made clear what the evidences of improvement should be and the skills to be acquired in managing their patterns more effectively.

Phase 2 consisted of two sessions which focus on learning to perform various interaction forms, placed in the context of role playing. The forms themselves were those patterns each boy was learning in programmed interaction therapy which he now was expected to practice. Both he and the others had to learn to act out the particular types of stresses (on demand, so to speak, not naturally) with which they were learning to cope. Thus, each boy got the opportunity to stress another and he, in turn, practiced his coping behavior.

These interaction forms were placed explicitly in the context of roles which they may encounter (though these are often made up of several such forms) such as boss and worker, teacher and pupil, and so on. The context of the role-playing was that of a game. In most cases, the boys played these roles in terms of situations which they themselves had experienced, either in the hospital or at home. The training counselor (leader) had to know when to cut off an over-reactive player and how to prevent too much stress for

an individual. Often he might have to shift to another situation when it became evident that a boy could not cope with the stress being delivered. As this phase continued, usually in the fourth session, the leader could sit back and observe since the boys had learned how to perform the interaction forms on their own.

Phase 3 abandoned the game-playing context of adopting a role and concentrated on the particular relationships of the boy -- with his mother, his siblings, his street friends, his teacher, and so on. As soon as an interactional diagnosis had been made by the boy of his adjustment problems in one of these relationships, usually aided in clarifying it by other boys in the group, the boy was instructed (as he is in individual therapy) in how to act, and the others were taught to use the appropriate therapeutic pattern. If a boy, for example, constantly took the initiative, never allowing anyone else to do so, he would be told to keep silent, while the others were told not to respond if he broke his silence. This pattern continued for all but the last session in the phase, when the boys chose one of their number to act as leader, allowing the training counselor to sit back as observer, only intervening if the leader was unable to maintain control. As mentioned earlier, if a second sequence appeared necessary, this pattern was repeated. Other boys took their turn as leaders. Also intensification of the magnitude of stress was allowed for those who had become over-confident, believing that their demonstrated capacity to deal with relatively easy situations meant that they could handle the more difficult without over-reacting.

Potentials of Group Sessions

In evaluating the progress which became evident in these group situations, it must be reiterated that since we were concerned with bringing about improvement as fast as possible, performance in groups was necessarily interrelated with individual therapy. On the other hand, it is worth pointing out that, in the space of about a month of these combined programs, evidences of improvement were evident in both and, in many cases, it did not appear to be necessary to continue the individual in group sessions. It has to be remembered also that the boy was taking part, everyday, in two other group situations, the workshop and the classroom. In a sense, therefore, since these situations were continuously evaluated in terms of progress in performance -- in working and in achievement -- more structured group situations were continuing to operate.

It is also important to realize that there was a carryover of the learned techniques not merely to the workshop and school, but to living on the ward and in reporting what happened on weekend home visits and the like. It was not so much that the boys knew the terms, which is relatively meaningless. They knew what these patterns were, how to act them out and could recognize them in others. Moreover, they used them, even sitting around in idle periods on the ward, and

commented opprobriously or approvingly at lack of skill or its opposite in a selected victim. How much can be attributed to group versus individual sessions is, obviously, not known, but the fact is that the boys did acquire a repertoire of behavior patterns which facilitated adjustment and reduced the frequency and severity of violent reactions. Where it has been possible to maintain contact, as in the Bronx, we have found that these learned skills can be easily elicited and reinforced where needed.

The significance of what was done here and could well be done in other group situations where the individual is not severely ill, is that the design of "role-playing" programs can be made more precise and effective by defining the component interaction forms, independently of the personality (and temperament) limitations which any given individual brings to the process. In other words, one writes the script (verbal and non-verbal) with the quantitative patterns specified; one can then train individuals to perform them and measure the degree to which they "follow the script". Role-playing, as presently employed by most of its advocates, depends on intuitive and subjective notions of what the "role" consists. Since efficacy is derived from following precise quantitative patterns, as discussed in the preceding chapter, what emerges from the instructions given from such sessions is an attempt to imitate unsystematically-remembered elements of someone's presumed stereotyped behavior. And this imitation, requiring some talent for acting, is filtered through the limits of the personality variables and, though different in some sense, is liable to be far removed from what the individual will encounter in the real world.

We had no opportunity to write such scripts and try them out with our adolescents. We have, however, described quantitatively the interaction forms and are preparing a manual for training and for analysis of group interaction data. In any case, we believe that it is far more fruitful to work in the context of real situations, roughly equivalent to those which the individual will encounter on the outside. We discussed the possibility of training some boys as interviewer-therapists, who clearly had the appropriate values of the personality variables, and showed skill in performance. We had planned to do so, but time ran out and, apart from administrative difficulties, there turned out to be legal restrictions on paying boys for such services.

Leadership: The Management of Group or Set Events

It is worth commenting also on the fact that group sessions, whether they are in such settings as just described, in the workshop or classroom, or occur naturally in the free interaction of life on the ward or on the playing field, provide an additional dimension for the individual's development for life in the real world. We are so accustomed to talk about leadership as if it were some kind of mysterious (but charismatic) property of the individual that we do not realize that there are a variety of interaction forms

which can be subsumed under such a label, each with its quantitative characteristics.⁶ Being able to initiate to a group and get them to respond requires not merely the capacity to know when to act and in what cultural context; it also demands the ability to enforce the response desired by being able to dominate one or more of the individuals in the group. Unless the leader is able to do this, he will fail at getting responses to his initiated actions.

We have all seen public speakers unable to "hold" an audience; we know that many school teachers cannot maintain "discipline" in their classrooms and military history is replete with accounts of generals and lesser officers who were unable to command, that is, could not, particularly in intervals of increasing stress, compel the troops to respond to their orders. The interaction forms of "leadership" vary remarkably from one cultural organizational setting to the next and the frequency and durations of these set events are the identifiable and measureable components. But it has to be kept in mind that they are, and must be supplemented, by interaction forms (roles or subroles) which involve pair interactions. In other words, as any skilled politician knows, prior achievement of stable patterns of interaction with those who are to be one's followers, (even in a smoke-filled room) makes the path of managing set events just that much easier.⁷

Although not described as systematically as one would obtain in a quantitative analysis, W.F. Whyte's "Street Corner Society" is an outstanding description of the way in which the leader, Doc, of a street corner gang in the North End of Boston maintained control by a judicious intermixture of initiative and dominance, both in pair and set events and by his ability to manage complementarity with a variety of personalities, including Whyte himself.⁸ Moreover, the account makes evident how political position varies as a function of the management of these set and pair events and how destructive to sustained leadership or to the attempt to wrest the dominant position from the leader are the temperamental patterns of the individuals involved. (It should be noted that Whyte uses origin of action for initiative, following Chapple's first definitions, and hence "originates" is equivalent to "initiates".)

For most of the boys with whom we worked, there was little opportunity to focus our training on leadership since the severity of the temperamental disorders was such that these were the preeminent concern. Moreover, in contrast to the gangs which Whyte describes, these boys were primarily loners. The important first step, therefore, was to be able to get them to work and adjust to each other. The so-called dyssocial sociopaths, i.e., the socialized gang members whose cultural patterns sanction committing violent acts, are able to manage with each other, however hostile they are to the world outside the gang.

We did, however, find that some of these young people, once they had gone successfully through the therapeutic process, were able to manage groups through interactional leadership. We were

never able to innovate and develop the organizational situation (for lack of administrative approval) through which this capacity to manage others could be utilized and maximized. But it has to be emphasized that the interaction forms which make up leadership are highly specific; they represent a particular constellation of quantitative values of the interaction variables (varying from one leadership situation to another) in addition to the capacity to initiate in set events.

Observation of these adolescents on any ward or street corner reveals constant attempts by most of them to get responses out of others, with varying degrees of success, usually low. The incompetence of their efforts stems from the inability of the sociopath to repeat his set events to establish a stable relationship with the others; he scatters his shots, so to speak, all over the landscape. As likely as not, rather than persist, he reacts violently to the failure of others to respond when he wants them to. Whyte's study beautifully illustrates the dynamics of the process; it is a clinical study of "natural" leadership, that is, unsupplemented by the rituals and procedures which cultural institutions like the school, the business or the church provide. In these, leadership (by a teacher say), is part of the role pattern built into the system.⁹ Given their existence and their repetitive necessity, they can be utilized by a personality with interactional leadership abilities, if these fit the situation. By building them into his or her performance, they can transfer a collection of individuals into a cohering group.

In the two formalized settings I shall now discuss, workshop and school, we were able to define a few composite roles for various types of jobs in both areas of vocational learning. Again, we are following through and elaborating this approach in the Bronx workshop community center through job design which requires defining how to expand "productive participation" for individual boys.¹⁰ In this project, in spite of the fact that we were never able to operate a total interaction therapy-rehabilitation program, we were able to demonstrate directions that should be followed, accomplishments which could be made within our limitations, and also to make clear that many of the ideas which people hold firmly about the "lack of motivation", "short attention span" and other stereotypes about sociopaths and psychopaths had no foundation in reality.

Chapter 8

Cultural Programming of Group Interaction Through the Workshop

It required no analytical sophistication to realize that a major difficulty facing the adolescents was their necessity to get a job when they left the hospital, though they might be compelled to continue in school briefly before so doing. Moreover, it was also obvious that not only had they had no job experience, but there exists a large body of dogmatic statements in the literature to the effect that sociopaths and psychopaths could not be motivated to work and, even if they got a job, would not pay attention long enough to become efficient producers. We had already begun a sheltered workshop program for chronic (back-ward) adult psychotics, and had found that stereotypes about their being unable to work were untrue, as long as the workshop was located on the dayroom of the ward, so they wouldn't have to leave it.¹

Although the boys were very different from such patients, we saw no reason to believe that failure was inevitable. Besides, if we were to follow the requirements of rehabilitation as we interpreted them, namely to begin the rehabilitation process coincident with the beginnings of treatment, as in physical medicine, we had to explore their potential for working. As soon as we had been able to get more work, from sub-contracts, than was necessary for the two adult wards with which we had begun, we set up a workshop on the dayroom of one ward which had a total population of 25 boys. As with the adults, the boys were paid on a piece rate and, to the extent possible in those days, we tried to price the jobs so that boys could earn the minimum wage, a policy made difficult by the uncertain process by which sub-contracts were obtained.

Nevertheless, the shop opened, the boys were paid weekly, being given part of it in spending money, immediately usable at the hospital canteen, and the balance put in their account from which they could withdraw what they needed for desired purchases. Boys who accumulated a sufficient amount of cash usually bought clothing for themselves, presents for family members before home visits and, in making these purchases, they were taken by one of our staff to the nearest community or shopping center so they could select what they wanted at a department store. As one might have expected with all such psychiatric homilies, the boys didn't show "lack of motivation", they were able to pay attention and concentrate on what they were doing; in fact, many of them quickly became excellent workers.

This did not mean, however, that, in the environment of the workshop, their acting out propensities disappeared. These did occur, sometimes frequently, and disciplinary action had to be taken by the foremen in charge, which usually meant suspending them from the workshop for a specified period. But this meant loss of spending money (and exclusion from interaction with other boys while the shop was running). In addition, the temperamental disorder was under

treatment by the therapist in programmed interaction therapy and in group sessions; such incidents were thus utilized as part of the content of the treatment sessions. Nevertheless, it was quite evident that, even though they worked, these intervals of work were interspersed with frequent periods of acting out, varying for the boy (and the severity of his temperamental disorder) and the too close proximity of individuals whose own patterns were exacerbating for him.

Often these heightened states of severe reactions began before the workshop opened for the day. They would continue unless the warring boys could be physically separated at different job stations. Yet crises still did occur in the shop, sometimes spreading to others with great rapidity, being cooled down by intervention of the foreman and/or exclusion of the most aggressive boy. Quite commonly, a reasonable level of adjustment was then established for the rest of the time the shop was operating, for that day at least. Some of the boys were not so strongly or frequently affected and worked reasonably consistently. In these cases, either they had progressed far enough in treatment so that there had been a significant increase in their thresholds and a definite habituation to stress, or their temperamental patterns were such as to cause them to withdraw from others, and concentrate on working to avoid interaction.

But relative peace was also facilitated by the degree to which the job gave each individual an opportunity for controlled (and appropriate) interaction with others. Sometimes this was provided by jobs which involved materials handling -- bringing and taking away work from boys who were working at fixed stations; sometimes it occurred where the job could be broken down into team operations, the most successful of which was the assembly of skirt hangers, where a simple machine for assembly of clips enabled 4 boys to work as a unit.

Designing Jobs for Therapeutic Purposes

I was quite aware, from many years of industrial experience, that jobs varied enormously in their interactional appropriateness.² In many businesses, the wide range of the values of the component personality variables make possible an extremely large number of job choices; that is, one can usually find specific jobs which fit the potentials (and limitations) of the individual personality. This assumes, of course, the presence of some degree of cognitive skills, a problem which becomes serious for these boys on the outside. But in the workshop, the number of jobs -- almost entirely assembly with a few salvage operations thrown in -- was too limited. Moreover, their complexity was so minimal that it was difficult to take the first step in job elaboration, namely to establish a meaningful division of labor in completing the job, preferably with three or

four different tasks to be performed. The number of floor boys (materials handlers) in a ward of 25 boys had to be small (this was a promotional job, paid at a day rate). In some cases, clerical, inspection and packing jobs were possible specializations. Still, at the borderline pricing with which workshops struggle, it was uneconomic to establish regular jobs such as these, through which boys could be rotated to habituate them to different interactional job requirements.

Another interference with job design for therapeutic purposes is the short run order which workshops ordinarily obtain. One does not get enough work to stabilize production and thus become able to make meaningful comparisons between boys in the same and different jobs. And even worse, and all sheltered workshops doing contract work suffer from it, contracts were highly seasonal. It was rare to locate a contractor who could provide the shop with steady work throughout the year. In general, too, for all the public relations hand-outs of large corporations, theoretically interested in helping the disabled and disadvantaged, most jobs were marginal in contributing to overhead and indirect.

Though a good working rule is to obtain a minimum of 100% for all other costs except the direct payment of the workers (patients) and, preferably, 150%, such contracts were few and far between. Large corporations were as ruthless as the marginal ones and, whatever may have been said in the front office, those awarding contracts tried to make the best deal for themselves they could. Moreover, as is well known, many small businesses survive by playing one sheltered workshop against another, giving them little or no margin to work with, constantly threatening, if the price isn't right, to give the work to another shop which the contractor "knows will do it for 50% less".

With all these difficulties, what we learned was by no means a total blank. In the first place, as mentioned earlier, we found, in general, that marked improvement in workshop performance followed upon marked improvement in the illness consequent upon treatment. Though boys did work and some were good producers, their vulnerability to stress was such as to reduce their earnings. Improvement occurred not simply because they were no longer excluded from the shop for disciplinary reasons; it meant there was a reduction in lost time due to various non-productive forms of interaction -- squabbling, protesting, goofing off -- and it also meant an increase in the rate and quality of production even against prior performance. It should be emphasized, according to those from whom we contracted work, that when this point was reached, the boys could equal, and sometimes surpass, good workers in their own employ.

Whenever jobs could be varied by sequencing the particular steps which had to be completed to obtain the finished product, we found that some jobs were best fitted for particular individuals. These jobs required particular values of tempo, initiative, activity

and the like, if maximum productivity was to be obtained. Since the number of jobs was small, all we can say is that certain individuals consistently did well in that type of job, often poorly in others which did not fit their interactional properties. More important, however, and again a finding on which the small number of jobs makes the generalization unable to be supported with confidence, we found that certain jobs appeared to enhance interactional performance, while others hindered it.³ Most obvious, of course, were the semi-supervisory types, floor boys, etc., where the presence, for example, of high initiative and quickness were essential if the various stations were to be serviced. Moreover, in the team operations such as the hanger units, the repetitive process which the division of labor enforced made synchronization increase as the group of four boys became, in the language of sports, a prime example of teamwork.

Components of Job Design

In workshops, sheltered or otherwise, most jobs are described and timed by using some variant of time and motion study. This may be an immediate necessity if a price has to be quickly arrived at, but even this can be highly misleading unless the job can be broken down into a series of steps which can be assigned to different individuals. As is well known, time studies are usually concerned with the elements of the motions performed by the individual in carrying out the job, sometimes divided into the 18 therbligs of the Gilbreths, more often less in number and more manageable. If the shop regards itself as up to date, it may even use the arbitrary values of MTM, a system long shown to be faulty (the use of standard times for particular motions, no matter in what sequence), since the values of the discrete motions vary with the order in which they occur.⁴ All of these procedures may have engineering arguments behind them; biologically, they obscure the action patterns by which beginnings and endings are discriminated. In addition, most jobs require interaction at some point, not necessarily for each motion sequence, but at various stages in the process. Time study has systematically ignored such interactions, preferring to make arbitrary allowances for delay time and all the rest.

But what we have to do is to ask how we can divide the process, if we can, how the work gets to the operator, how it moves from him to another, how it is taken away, what is needed for inspection and where it is done, and how we program any needed supervisory attention? Further, all this occurs within a physical space, the workshop, where we have tables, benches or other work surfaces which separate individuals, and may not be too flexible. Thus we have to include the physical layout, where the boys are located within it, and what they are doing, either on this job or on another. If we see the opportunity to use small conveyors, if we have to set up jigs for processing (or even set up the job as in machine operation), if we are using machines with various mechanical needs which require

maintenance, we can begin to specify who does what, with whom, when, where, how often and for how long.

All of this may appear time consuming, and so it could become if not done systematically, since we are necessarily concerned with the movement of three components -- materials, paper (very important and often ignored) and people -- in our production flow.⁵ So what we have to do, in designing jobs, is to specify and set up trial runs and then measure the time durations of the constituent action patterns, the order of interactions and the variables which will affect production. In one design, we see that a particular division of labor, which this job breakdown makes possible, will require someone who is quick to initiate, has a fast tempo, an ability to respond quickly to a variety of initiatives from others, and flexible enough to adapt to each of them. Or perhaps we can substitute conveyors for part of this process; in any case, we have to make a decision as to the most effective job design. It often happens that some jobs can be subdivided between several people and yet, at the same time, without too much loss in efficiency, one person can do the job alone. What are our interactional requirements, what do we need to fit our therapeutic needs?

I have elsewhere discussed this process at length.⁶ We are, at present, preparing a manual of workshop operations which makes this kind of approach available both for jobs (usually simple) within a workshop proper, and also for the jobs in which the individual may be placed in large or small organizations. This will include both the personality profiles required by each job category (and the temperamental restrictions thereupon) and a rough evaluation of the vocational cognitive limitations it imposes. As mentioned earlier, these profiles or clusters represent homogeneous interactional configurations. They are thus usable in a whole range of jobs involving similar contexts of situation, differentiated then by the skills of language or physical movement or special talent. For placement, and for vocational training for such placement (and this should always come after the diagnostic process has been completed), they provide a straightforward technique for decision. But we have to know the availability of job types for such individuals just as the kinds of work we can bring in to a workshop impose even more severe limits on the maximum use of job design for effective therapeutic programs.

Uses and Limitations of Supervisory Stress

In our initial proposal, we proposed experimenting with the administration of programmed interactional stress by the foreman for selected individuals, using that type of stress which was known to be disturbing for that boy. Although we believe that it could be usefully employed with other types of patients, it became obvious that it had little or no useful properties with these individuals. The reason was simple. The frequency and durations of stress

situations was a relatively constant component of the interaction of the boys in the shop. So the foreman, to maintain discipline, had also to administer stress, usually in the form of dominance, supplemented by removing the boy from the workshop. As we have pointed out, the established workshop where the boys had been receiving programmed interaction therapy had as its focus the attempt to evaluate the effects of job design on the boys' performance. The introduction of supervisory stress would confound the data we were obtaining, particularly since the type of job and the workflow had to remain constant.

We then decided to try out the procedure in a new workshop with boys just entering the treatment-rehabilitation program. But it became obvious almost from the start that the "noise" stress level was far higher with these boys who had not undergone any extended period of therapy. Though we demonstrated that such a program could be conducted, it was also clear that unless we were dealing with boys or adults with other types of disorders whose problems of adjustment are more those of withdrawal than acting out, the program could not yield enough differential information on the relative effects of dominance or non-response patterns. These were constantly occurring between the boys, and between the foreman and the boys, independently of our programmed intervals.

The workshop sets these reaction patterns in motion almost automatically, and natural experiments are being carried on at a high frequency within the interactional environment. If the foreman is properly selected and trained in interaction techniques as ours were, what might be highly disturbing to many other supervisors is relatively easily managed by him. But the maintenance of control does require the repeated use of dominance (and isolation from the shop), and the process of habilitation is better done within the framework of individual and group sessions on a planned basis, and within the natural environment of the workshop as needed.

We still believe that, for many of the handicapped and disadvantaged, exposure to stressful shop supervisory behavior is essential for preparation for placement outside. Otherwise, its sudden manifestation after the "sheltering" environment of the workshop can be severely disturbing. For these boys, disturbance, the repetition of severe stress, is a way of life. Our job then was to enable them to become desensitized to its impacts, not to reinforce its disturbing properties.

Cultural Innovation in Workshop Organization

I have already touched briefly on the ways in which the cultural environment can be managed through application of the principle of the division of labor in job design. In so doing, I should make clear, as I have discussed elsewhere in a number of publications, that the cultural environment is not some vague evanescent cumulation

of all the things that people do and say; it is reducible to manageable dimensions -- like spatial distance (between two persons), sequencing of activities as in the work flow which the division of labor makes possible, and the association of particular symbols with particular interaction patterns.⁸

These dimensions are mathematically defined -- distance in its three-dimensional form, direction in degrees of arc (for orientation towards or away in posture or gaze); as ordinal positions in a work or ritual sequence, or (and more complicated) as ordinal values of symbolic levels or as measured functions of intensity of sound or action. What this means is that one can utilize these dimensions in planning the work in the shop or the activities associated with them. We can then compute the probabilities that interaction will take place between specified individuals, and not with others, depending on what we are trying to accomplish. Thus we don't have to guess at what we are doing, "Maybe if we put Jose here and Mike over there, they'll have to interact". We can work out the organizational, not merely the job, designs systematically.⁹

I should hasten to add that this was not done in the project I am describing, primarily because all our efforts were concentrated on the development of programmed interaction therapy and its supporting programs. As we can devote more time (and have more freedom) to develop the total therapy-rehabilitation system in the Bronx workshop community center, these practical applications will be forthcoming. I should add (and emphasize) that we use training as the program designation, rather than therapy, in any non-psychiatric facility.

But I think it is worth going beyond this focus on the cultural design of jobs in the shop to point out that, if we are going to develop a total system for the individual, we have to provide him with interdependent training and operating experiences. These will have to go beyond the workshop itself, the classroom (to be described) and the basic programmed interaction training in its individual and group forms. What we have to ask is how can we design a variety of interaction forms in sufficient numbers to facilitate stabilization of his potential for a life career (and, of course, find such opportunities in the society to which he is to return)? In a sense, this is what community centers of all types and persuasions believe they are doing -- courses in leadership, public speaking, arts and crafts, trades and professions in one form or another. Moreover, their program activities, theoretically, make available all sorts of group involvements, usually in terms of expressed "interests", from the Boy Scouts to theatrical performance.

All this is well-intentioned and represents some kind of cultural intuition about need. Unfortunately, it is middle-class (and professionally) oriented, inappropriate on its face for blacks and Puerto Ricans from the ghettos. In fact, it is not very appealing for most of those to whom it might (or should) attract. Moreover,

like the dilemma in which occupational therapy finds itself, there are few who really require their outlets to be through crafts. Yet the natural self-selection process of the O.T. worker is almost inevitably through the possession of craft skills. Thus the "occupational" component of the title is neglected, particularly since the educational programs by which these specialists are produced are almost entirely innocent of any chance of learning about what goes on in business and industry.

If we begin with workshops (sheltered in the legal sense or not, but at least as partly subsidized, non-profit organizations), we have to ask how they can be expanded to provide a variety of job experiences and, perhaps ultimately, jobs within them which do not require academic achievement or professional accreditation. I have already mentioned our plan to develop training counselors from our own boys (stymied by legal and administrative difficulties within the hospital). Obviously, such jobs can be justified under the "paraprofessional" canopy within the workshop center, given reasonable funding, in the same way that production supervisors, maintenance men, etc., are both necessary to the organization and can lead to outside jobs.

Beyond that, it is essential for those of us concerned with rehabilitation, to a large extent having to use workshops as part of the rehabilitation framework, to try to become independent of the sub-contracting morass in which we are caught.¹⁰ There are workshops which become, in effect, manufacturing establishments with their own line of products; in rare cases, highly specialized as in electronics. These make possible organizational differentiation beyond that which a simple job shop can afford. Provided the products are so selected and the organization makes a go of it, one then needs to develop sales personnel, plus all the other specialties of modern business. One can also make available services of various sorts. I should emphasize that the organization should have available one or more entrepreneurial people, one of whom is sophisticated in knowing what services Federal or local governments will pay for, directly or as part of various types of support programs for community endeavours. Following such leads, the training and rehabilitation system can be expanded to utilize a culturally viable organizational network of jobs of all sorts, many of which can lead to necessary and significant work in business or government.

Through all this, however, there is the imminent threat to each boy of a cut-off of opportunity through the qualifications for employment which the educational, business and governmental establishments presently hold dear. Each group, whether civil service, professional, union or even those in management who, having obtained a college degree, think it should be an essential requirement to be a policeman, a foreman, a clerk, is threatened by the educationally disadvantaged. There is no question of the strength of the American myth that college, perhaps even graduate degrees, are essential before you even start to get dressed in the morning.

Still it has been demonstrated in many areas that too much education is inversely related to good performance.¹¹ The courts increasingly are holding that psychological tests, college degrees and the rest of the ritual barriers must be shown to be directly related to performing a particular job.¹² Hopefully, one cannot, for very much longer, look on the better-paying jobs as the special preserve of those who belong to the club.

Moreover, it is also becoming obvious from our cumulative experience in dealing with young and old individuals who have the chronic autonomic-interaction syndrome, that such restrictions, even at the psychiatric level, provide no differential value in successful management of the individual. Still, even though we recognize these realities, it is also true that some cognitive skills can be shown to be needed for particular jobs, as the Supreme Court has ruled we must demonstrate. The problems we faced in providing vocationally focussed education for our sociopaths we shall now consider.

Cultural Programming of Group Interaction in the Classroom

When our original program began in January, 1966 as a Hospital Improvement Program supported by NIMH, we were aware that special research efforts were needed if we were to make any headway in improving the educational achievement of our boys. An HIP grant has (and had) a \$100,000 limit on what a hospital could request, so we budgeted for two special research teachers, since we were then under the misapprehension that programs that we might develop which proved themselves to be effective would be taken over by the hospital school system through which education was provided up to the age of 16. A special act had also been passed by the New York State Legislature in the following year requiring the Department of Mental Hygiene to provide education up to 21, but, unwittingly, the law was so drawn that, as I have mentioned, an escape clause was built in, for those "who can benefit therefrom". No formal exclusion of those 16 years and older took place, of course, but limitations on funds and the difficulties provided by the older boys were enough to make the law a dead letter in all the hospitals which admitted children and adolescents.

Since our original conception of what we would do was to conduct educational experiments with whatever programs looked hopeful, including any ideas of our own, we did not include education in the VHA project which began the following year. As it turned out, of course, we were regrettable naive on the potential effects of inflation. When the HIP grant was abruptly ended, coterminous in fact with the end of SRS support, salaries had risen very considerably as had charges for indirect "expense" by the Research Foundation for Mental Hygiene (in the earlier days, no indirect had been taken from the \$100,000 total). The result was that we were not able to carry out an educational program as we had planned.

In the first place, the traditionalism of the professional teachers, perhaps even stronger in the backwaters of a state mental hospital than in most school systems, proved immovable. As a consequence, after repeated efforts to operate as staff specialists as we originally contemplated, we had to begin to bring pressure, to try to be given the total responsibility for the educational program for those boys with whom we were working with endless discussions and justifications of differential improvement of those boys in our special classes. It was not merely the school's unwillingness to utilize programs which seemed beneficial -- although most were not particularly novel -- it was extremely difficult to schedule our special classes, individual and group interaction therapy sessions, and the workshop periods, since the school system worked out a schedule to suit itself, with little regard for other disciplines. Finally, through the then Director, Dr. Stanley, we were assigned this responsibility. For territorial

reasons, however, we were never able to utilize the two "shops" (wood-working and auto mechanic) since their use was scheduled by the hospital school which refused to allow us to use them with our own staff.

The Academic Double-Bind

In the early years, we concentrated our efforts on trying to devise programs which would significantly increase the achievement levels which bi-yearly testing with the California Achievement Tests yielded. These tests had been long in use at the hospital, in spite of the fact that Metropolitan Tests are used in the City of New York. We believed, heretically, that if tests were to be used as criteria of educational improvement, the boys should learn to use the kind of tests to which they would be exposed on their return home. In addition, our own comparative trials, and those reported in the literature, showed that the Metropolitan would give a child a rank about one year below that which the California would assign. For those not knowing the difference, of course, this higher achievement score which the California provided was good advertising for the Rockland State Hospital school system and, no doubt, helped the Department in its budget requests.

In evaluating the educational achievement level of the boys, it has to be understood that educational retardation is endemic in the New York City schools. If a boy (or girl) is not more than 3 years behind the expected grade for his age, he is "passable". 30% of our boys were in this acceptable range (some, of course, but not many, being able to stay with the class requirements), 50% were between 4 and 5 years retarded and the remaining 20%, 6 or more years retarded. Remember that these boys were not autistic or childhood schizophrenics; they were, however, almost entirely blacks or Puerto Ricans from the southern Bronx and Harlem. For what it is worth, given the nature of the cultural backgrounds from which these boys came, 25% fell between 50 and 70 in the I.Q. score, 50% from 70 to 90, and another 25%, 90 and over, with an occasional boy over 110. (It should be noted that 50 was the cut-off point for being sent to a school for the retarded unless, as did happen in the early years, after admission his sociopathic behavior was more than the State school could handle. They would then be transferred to Rockland.)

Without describing the particular programs which we tried out, since this is not germane to this discussion, in the early stages of our program a variety of comparisons showed that, matching our boys with those in the regular hospital school system who were not in our program (though getting "treatment" in all its non-inter-
actional forms), and remembering that our special classes were only able to meet once or twice a week, our boys showed an increase in reading, arithmetic and language achievement over double that of

the controls. In some cases, boys increased two to three years in level within the space of a year. When we finally took over the classes, but with still only two teachers for as many as 50 boys, supplemented by some volunteers among the therapists for occasional classes, the same improvement levels were secured.

However, a major difficulty on which I have commented elsewhere, arose because of the traditional summer vacation of the teachers (in the first years of the project) and the related emphasis of psychiatric administrators on sending boys home, if possible, in the summer. As mentioned earlier, summer vacation for those educationally retarded can cause them to lose as much as a year, i.e., comparing June scores with September scores. Hayes has shown this to be an universal attribute of New York City schools.¹ In addition, so traditional was the outlook that, rather than concentrate one's therapeutic and rehabilitation efforts to speed up improvement, the leisurely summer program, with vacations and all the other conveniences of summer (and I am not knocking vacations for myself or for my staff) meant that it was difficult to maintain a sustained effort with the boys in education or anything else, no matter how much one tried to plan for adequate coverage. Funds were, of course, not available to supplement the staff to keep the program operating at full capacity, hence summer almost inevitably was a period of arrested progress.

But the real problems, educationally, arose from the curricula which the New York City schools impose on those who are still too young not to have to return to them, and the equivalent curriculum preoccupation of the hospital school. Though one would often hear it said that the adolescents had few prospects of achieving (educationally) their age level, all the effort (and manpower) was devoted to programs the teachers themselves admitted to be a lost cause. As we took over our own teaching, no teachers were allocated to us to supplement the two on grants (though by State law they should have been). Thus our efforts to break out of the academic path to place education in a vocational rehabilitation context was of little or no avail.

It became evident, however, that what we needed to do, in spite of the self-fulfilling prophecy that a boy going back to a city school will have trouble in that school, was to try to give preponderant attention to those elements of reading, language, arithmetic, and whatever other elements of education were essential in getting a job above the level of a common laborer. Yet we tried to combine both aims, utilizing three types of programs: 1) a weekly "classical" movie, at least a reasonably good film, which could be supplemented by the book on which it is based, from War of the Worlds to Macbeth; this was in addition to the use of the Sullivan material in the classroom. 2) an incentive plan in which boys were paid a cash bonus, varying in amount for the amount of improvement they showed on tests organized around these, and other types of material; and 3) a vocational curriculum, designed to be used to bypass the hang-ups of traditional educational curricula. It was

intended to train in terms of job requirements, and levels therein, and disregard the scholastic emphasis on much teaching.

We hoped to test out these programs at the hospital during the last year of the program, but its forced abandonment made a conclusive study impossible. Incomplete results however, did seem promising. We also started to introduce it in the Bronx (with the same types of adolescents) and though, once again, the boys' progress was hopeful, inadequate finances have forced us to terminate the special research teachers. So the whole approach is up in the air until we can get funding specifically for this purpose. But, from our experience over almost six years, we believe that the emphasis has to be on a combined interactional and vocationally oriented educational program.

I hasten to add that I do not mean vocational programs in the traditional sense such as the proposed expansion of vocational high schools and junior highs, or their equivalents, in the City. These programs are all designed to train people for specific trades, presumably those trades which hire the largest number of individuals in New York City. Most of this is wasted effort, since the first problem is to get adolescents used to working steadily. This can only be done by the combination of paid workshop employment and programmed interaction training which we have described. And where is the money coming from? Moreover, it is essential to find out what job patterns are appropriate for particular individuals; merely training someone in a trade with little or no realization on his part, or on that of his teachers, of the kinds of stresses which available jobs in these trades will impose on him, is useless.

Such an approach assumes that learning a trade, per se, (and predicting which trades will be most in demand is imprecise at best) can overcome all the needs of the personality to find satisfactory outlets. It ignores the importance of not subjecting the adolescent (or any of us) to reactivation of his temperamental disorders. Vocational schools, in most big city school systems, are really nothing but dumping grounds for those who cannot make it in the regular curriculum high schools.² They are regarded as second-class organizations by the educational hierarchy, and there is little hope that any new and innovative directions will be taken by them.

Variations in Interactional Design

Although we were very much aware of the importance of the interactional patterns in the classroom, not merely those of the adolescents, but also those of the teachers, we were unable to make systematic observations. Teachers were all trained in interaction techniques and kept abreast with the progress of each boy in individual and group sessions. They were reduced to making notes, usually after class, of the reaction patterns of the boys and their

particular difficulties in dealing with cognitive material. Most teachers we employed possessed a New York State teachers certificate and had gone to approved teachers colleges. Surprisingly, in spite of their interactional training, once they began to teach, they very quickly relapsed into the traditional hierarchical thinking of the professional teacher. What this means is that educational difficulties or achievements are regarded as primary. Hence the temperamental disorders which were, so to speak, popping out all over were treated in a moral (and disciplinary) context, for all the lip service to the "emotional" or "psychological" which were, in fact, the predominant and major presenting states. At least their notes usually described what happened in interactional terms.

The idea that "students shouldn't behave this way" was endemic, even though teachers having a formal civil service position were required, by way of qualifications, to take the usual courses in abnormal psychology and all the rest. Nevertheless, middle-class morality was rampant. The moment the teacher assumed his teaching role, even where he had spent some time as a training counselor carrying on programmed interaction therapy, everything became subordinate to the patient's cognitive problems. As the program continued, it became obvious, once again, that whatever professionalism might bring to teachers in improving their techniques of teaching (granted a dubious supposition), they clearly failed to comprehend that they were dealing with the severely psychiatrically ill. In fact, this attitude was common to all the professionals, including the psychiatrists. The temptation was strong, after listening to accounts of lack of motivation and the like, even of violent behavior in the classroom and elsewhere, to ask, "Isn't this the reason they are here"? Occasionally, I succumbed.

As in the case of the workshop, moreover, the evidence clearly demonstrates that major improvements in educational achievement follow after improvement in the temperamental disorder being worked with in therapy. I hasten to add that I am, of course, referring to programmed interaction therapy, since too often the teachers reported, of a particular boy, that he was so tranquilized by drugs that he couldn't even stay awake.

This is not to deny that the selective choice of drugs, for certain particularly severe states, can be beneficial (witness the use of the amphetamines with the hyperactive). Still prescription should be based on very carefully defined criteria of the interactional properties of the individual and the known changes which will be induced in the interaction variables by so doing. With some exceptions, most drug prescriptions were administered as a means of control -- for disciplinary reasons -- not to increase the level of adjustment and reduce the violence of the reactions of the particular temperamental disorder of the individual. Even assuming that a particular drug was indicated, one might have thought, naively as it turned out, that when a teacher reported obvious over-sedation, the psychiatrist would change the dosage or even take the patient off the drug.

Parenthetically, except in certain defined conditions, we believe that drugs are unnecessary. Certainly, they made the administration of programmed interaction therapy more difficult and protracted. The reason for this is simple. It is not so much the incidence of over-sedation that is relevant. It has to be remembered that interaction therapy depends on managing and desensitizing the individual to the stresses which trigger off the violent reaction. Give him drugs, and the autonomic-interactional system is "tranquilized" until they are metabolized. The therapeutic techniques we have described cannot but be less effective, because the patient has to learn to adjust, has to be able to discriminate when stresses are building up, and has to become habituated to greater and greater intensities, "dosages" one could call them, when they are administered.

The classroom is, of course, an excellent laboratory for interactional analysis and I have written elsewhere about the different roles, that is to say the different combinations of interaction forms which teaching requires.³ A constant pre-occupation for teachers dealing with sociopaths is to reduce the size of the class on the theory that the less there are, the easier they will be to control. The accepted class size, budgetarily and presumably part of the educational dogma, is limited to eight pupils. One finds, however, a constant tendency to try to reduce the number to six, to five, particularly with the older adolescents. In our own work, it became obvious that such limitations had no realistic foundation. It very much depended on the personality pattern of the teacher (his leadership characteristics, interactionally) and, of course, on a reasonable equivalence in cognitive levels in the pupils. Classes up to 20 turned out to be no problem provided the teacher was trained to manage dominance, knew how to space set or group events and was quick in demanding compliance to instructions by immediate intervention until dominance was established.

It was also obvious that the conduct of classes generally, and particularly for those adolescents, would benefit from the availability of the kind of interactional scripts which I touched on when discussing our group sessions. The teacher has to know what to do from the moment he or she comes into the class, when to initiate and to whom, how to use the personality differences before him to develop an interactional train in which the boys are synchronizing to him, and to the other students. Moreover, since there are all sorts of linguistic and cultural barriers, he has to realize that his primary task is to manage the interaction with minimal intervals of stress, allowing at the same time for maximum outlet for expression. Under such interactional environmental conditions, the boys will pay attention, they will minimize their acting out patterns vis-a-vis each other. Otherwise, they can destroy a classroom and a teacher in fractions of a minute.

There have been many studies, using very simple interactional operations, usually of who initiates to whom, which demonstrate the

stereotypy of much teaching.^{4,5} This is evidenced not merely in the constant initiations by the teacher, as if by so doing he could cut off any tendency to maladjustment, or by taking refuge in reading a story or text, whether or not the members of the class have gone to sleep, or are surreptitiously fighting or, in any case, paying no attention. Such studies have shown that the teacher spends as much time as possible in front of the class, at a desk or table, preferably on a dais, and that most of the interaction takes place between the teacher and those in the front row, if the traditional layout, with its rows of desks, constrains their positions. Change the layout, put a group of pupils around a table, and other problems arise and hence other interaction forms are called for.

This is not the place to discuss classroom techniques from an interactional point of view. However, it should be emphasized that precisely the same cultural constraints touched on in describing the workshop (and possible innovations therein) are at work. They should be used to facilitate the teaching process. And since we are dealing with a group of individuals whose focus, by necessity, is on the teacher, we also need to examine the degree to which ritual sequences can be employed. These cannot be in the half-baked manner of the present, but programmed sequential patterns which utilize the emotional-interactional propensities of the students and reinforce the patterns of adjustment on which successful teaching depends. These will arise from situations in the room, and in the larger group, and require the teacher to be innovative and flexible in making explicit and workable the half-formulated patterns of others. What the constituent elements are I have discussed at length in various publications, but they require a sequencing of pair and group events in ways which lead up to some kind of heightened interactional adjustment.⁶

Community Placement: Criterion of Success?

Psychiatry, like so many other behavioral "science" empiricisms, is perennially swept by crazes, the most recent of which, carrying all the intolerances of high fashion, is the belief in the healing capacity of "the community". Only get the patients out into "the community" or, better, don't admit them to the hospital, construct community mental health centers in every geographically separable area, and all will be well. Every area delimited on a map then becomes a "catchment area" and, by bringing mental health services into the theoretical "community" which it represents, close bonds can be set up which are "good" for the patient.

Even in the middle-class suburbs, "community", as a closely-knit, small group of individuals whose relationships involve much face-to-face interaction, like the Amish or the members of a kibbutz, is a myth. In the urban ghettos and, in fact, in most cities and towns where continuity of residence for more than a generation is becoming rare, it is laughable. Panzetta has described the consequences for psychiatry with the emergence of self-appointed "community psychiatrists" who believe that, by being "doctors of the community", they can spread mental health to all its inhabitants, with paraprofessionals (and some non-psychiatric professionals) dealing with the individuals who come to the door.¹

Psychiatrists have received their training as physicians and as therapists, using drugs and, usually, some modified form of psychotherapy, with its roots in psychoanalysis. They are neither administrators (as far as training and, usually, aptitude goes), nor are they politicians. In the hard realities of the ghettos, with the black revolution increasing in intensity, accompanied by similar struggles by Puerto Ricans and other ethnically disadvantaged peoples, these community psychiatrists can easily become the guilt-ridden prey of highly mobile and vocal "leaders". That these are leaders without a following, that they hope to get in the position to channel the resources of the community mental health center to aid in acquiring followers is self-evident, as Panzetta points out.² Some may succeed, but in so doing, it will be the middle-class psychiatrist and his staff who become subordinate, devoting their efforts to facilitate the acquisition of political power by this "leader". Is this psychiatry? Is this how treatment and rehabilitation are to be managed?

Panzetta emphasizes, what anthropologists and sociologists have long known, that this mythical "community" not merely does not exist, but that the psychiatrists think that "community" is evidenced by the appearance of a small number of people from the adjoining "catchment" area, who are essentially isolates but, for one reason or another, are interested in mental health matters.

They may say they represent a large constituency; in fact, it rarely consists of more than themselves. In talking about the problems rehabilitation faces in the South Bronx, I commented, "Although it is customary to talk about community with an implicit assumption as to its organizational coherence, the fact is that this is largely fiction, (particularly in what in this country writers like to call the ghettos of the inner cities). We are actually dealing with complex combinations of often unrelated organizations, small and large, whose interactional ties, in fact, may be extremely low in frequency and in mutual influences, however logical they may appear on paper in the writings of political scientists, bureaucrats or city planners.

"Community organization or, better, organization of organizations is established only through interaction. The relationship of the individuals in the various focal points in the networks is likely to be shifting and unstable, constantly at the mercy of varying personality needs and temperamental reactions as adjustments fluctuate between people. This variability is made worse by the constraints which space (crowding and separation) and technology and custom impose on the order in which people must interact through some kind of structured and learned sequencing. They are further differentiated by symbolic (and linguistic) ambiguity, which restricts the communication process. These are the cultural dimensions of the anthropologist and, in the ghettos, their influence on rehabilitation can often appear chaotic.

"Moreover, though the stereotype of the social scientist and the activists of our society has it that there is a power structure, an 'Establishment', which maintains a tight control underneath all signs of instability, the fact is that this is only one more instance of the way the logics of our culture (not the science) try to impose order on and affect reality. It is more accurate to recognize the structure as a maze of disparate personalities and relationships, with no unifying center able to establish hegemony over the whole."³

Ambiguities of the Criterion: Discharge to the "Community"

Although one should not expect that psychiatrists, however much they may regard themselves as "community" specialists, can be aware on a day to day, hour to hour, basis of what actually goes on in an area like the South Bronx*, since they have neither the time nor the training to be field anthropologists, yet we must recognize the pervading influence of this awareness. They may

* Technically, the South Bronx is a label applied to part of the Southern Bronx; it also includes Morrisania, Hunts Point, all the area below Fordham Road and Pelham Parkway.

illustrate their discourse by appropriate quotations from patients they have seen and from some of their staff who live there, but it is extremely difficult for them to realize that the ecological (anthropological) approach implicit in the idea of "community" requires a detailed building up of the network, such as it is, from the ground up, if rehabilitation is to be managed with even modest hopes for success.

As a consequence, the tendency is for them to impose their mental image of the ghetto on both policy and operating decisions, and to carry along their staff, who may have more direct knowledge, through their authority and their capacity for conceptual verbalization. I do not mean that this is done consciously. Everywhere today, and throughout history, we find individuals in positions of power (and their followers) whose ideas about people in other cultures, the springs which move them and the course they are likely to take, are almost completely divorced from any sense of reality. Southeast Asia is only one example. When we are dealing with individuals, young and old, of alien cultures from these ghetto areas, we can only expect (however much we wish this was not the case) that middle-class values and concepts will substitute for reality.

Thus if the criterion of success for a hospitalized adolescent was merely discharge to the community, and if the responsible psychiatrists hold, as they did, and do, that almost anything was better than remaining in the hospital, too often young people were discharged before they had improved to the point where they had even stabilized their adjustment. This was not simply due to the unwillingness of the psychiatrist to accept our recommendations. Rather he was under great pressure to empty his wards, in the first years of our work, to make room for others coming in; now the announced policy is simply to reduce the population in the hospital to zero.

Again in those earlier years, the expressed request by parent, guardian or relative for the boy to be released was in itself regarded as a "good sign", no matter what the family and neighborhood situation. Not surprisingly, the boys usually returned shortly, thereafter, unless they got into more serious trouble with the police and were sent to correctional institutions. Today, they would not be readmitted, since the unstated policy not to admit character disorder adolescents has taken over. In addition, Rockland's catchment areas have been changed (due to its 20 mile distance from its "community") from the Bronx and Harlem to Rockland and Westchester counties. Those hospitals supposedly taking on the load in the "communities" of New York City have similar (unofficial) policies, so here, at least, the "community-catchment" equivalent is not working.

Actually, the practical difficulties to be overcome when a boy was ready to make an adjustment to the Bronx and Harlem were

far greater than one might expect. By law, an adolescent was compelled to return to school until he reached his 17th birthday, though when he became 16, if his parent, the guidance counselor and the principal at the school all agreed that he should not continue, he could become a certified dropout and go to work, if he could find a job. However, it was almost universally true that no school in the city wanted to take back a boy who had been sent to Rockland. Major efforts of our staff were indispensable to get him returned; often months would go by before permission could be obtained. The New York City school system was loath to accept the recommendations of the psychiatrists at Rockland, and tried to require their own "evaluation" process. This delay remarkably increased the rate of recidivism, since discharge was usually dependent on the assumption that school or job would be available.

Apart from the onus of having been sent to Rockland, opportunities for employment were further diminished by the fact that our population was made up almost entirely of Black or Puerto Rican boys; most of them reading (optimistically) at the 3rd grade level and with no skills or experience. Whatever kind of work they might find was low paid (not covered by the minimum wage), usually temporary, and the employers who did take them were less than patient with any problems of adjusting to the job the boy might have. In addition, there is a wealth of laws prohibiting or regulating the conditions under which young people can work. However well intentioned, their practical consequences were to shut off all but such jobs as being a delivery boy, doing common labor, etc.

The various governmental programs, usually lumped together as poverty programs, were extremely slow to hire anyone, not merely adolescents. They were strangled with red tape and uncertainties of financing. Moreover, organizations like the Job Corps were primarily concerned with vocational training and, after 14 weeks of learning to run a lathe, for example, the boy would be told of a job opening in Nebraska. If the boy didn't accept (and they were overcome by the threat of leaving the home territory, so few did), that ended the pressure of a commitment to find a job. Only if some one of our staff could overcome the obstacles by going with each boy each time he went to apply, and make separate visits on his own, was there any chance of success.

In theory, the New York State Office of Vocational Rehabilitation also is charged with the responsibility of aiding young people, 14 years and up, but this was a regulation honored in the breach. Partly this was due to shortage of funds for older clients, partly due to the number of vacant positions for rehabilitation counselors in New York City. In addition, there has always been a perennial struggle over the nature of the vocational rehabilitation counselor's job. Are they to be counselors, or evaluators and placement specialists? Even our own counselors, as we shall see in the following chapter, preferred the role of counselors, "junior

therapists". Placing a boy did not fit their notion of their job.

And beyond all this, there is the waste land of Harlem and the Bronx, a no man's land where every possible kind of disturbance can and does arise, where even the most innocent get caught in the cross fire, and some of our boys did. Little needs be said to embellish the countless books, articles and newspaper reports on the troubles these areas encounter; they hardly provide even the minimal resources, except in name, which can assist the returnee to make a successful adjustment. Yet this is where we had to work; it was to these jungles that the boys had to be returned. As minors, custody (if such it could be called) was the legal right of the parents, if living and willing to take them in, or some other relative, often a grandmother, who could provide a shelter. Most of the homes were centered around the mother, rarely was the true father present. Almost always, the adult male was represented by a succession of "step-fathers" or just plain men, with the primary source of income the welfare check.

The social environment of the ghettos was thus barren of opportunity. Apart from the institutional representatives of authority, police, school teacher, attendance officer, welfare social worker who could directly interfere, the boy's relationships were primarily to the other members of his family in the household where he lived, perhaps to other households of a married sister, a grandparent, etc., and to his peers. But these peer relationships tended to be unstable. The boys had only begun to learn how to sustain adjustment and the strongest bonds they had were our own staff from Rockland. They came to the city weekly and maintained contact with the boys whom they had treated, supplemented by such aid as our few professionals could provide in trying to overcome the red tape to get a boy back into school, to find a Job Corps opening, and so on.

From the beginning, we had insisted that "continuity of care" meant something more than continuing contact with the boy by someone in the institution. In our case, what it meant, and what we tried to manage against many obstacles, was to have the individual worker (often several) who had worked with the boy in one of the programs discussed earlier go to the city on a regular basis and arrange to see him. For one period during the project's life, we had the use of part of the rectory of an Episcopalian mission church in the South Bronx. Though seriously constrained by space limitations and other uncertainties, this became the place for boys to come, even from Manhattan.

More recently, with the establishment of the Workshop for Youth, also in the South Bronx, under SRS support,⁴ we have the ingredients for what we hope to be an expanding workshop community center, not I hasten to add, a community mental health center since with these boys, divorcement from any implications of mental health programs is essential. As described elsewhere, we run an industrial operation. What would have had to be called therapy in a hospital

is, in fact -- and truthfully -- a training program in vocational adjustment for getting a good job and managing to hold it. The boys come to the workshop for employment, they are paid at the minimum wage (and frequently do much better), and the stigma of commitment to a state hospital or attendance at a community mental health center is not upon them.

It is worth emphasizing that our various programs in the South Bronx, none very large or all-encompassing, were not intended as after-care programs. The Department of Mental Hygiene operates After-Care clinics in all the boroughs of the city. In theory, discharged patients are sent to it, to receive medication if prescribed, and "therapy". Under prior law, most patients were sent out on "convalescent status"; that is, they were not discharged outright until they had "demonstrated" that they could manage. Under convalescent status regulations, they were supposed to show up at the After-Care clinic. Usually a month or so later, the records on the patient would arrive from the hospital, frequently after the patient had already returned. However, few if any adolescents made even a first visit. Now that the law has been modified, all (almost all) are discharged; the After-Care clinics only service the long-time chronic psychotics.

In the first year and a half of the program, boys on convalescent status were picked up by one of the staff members in the city and brought back to Rockland, sometimes with a parent or sibling, more often not. But this was a cumbersome and time-consuming process though, in fact, it worked reasonably well in terms of getting them to come. However, the availability of a location in the Bronx, at the Episcopal Mission Church, made the problem much simpler. Due to the lack of funds, no permanent staff could be located there. Its most useful purpose was as a week-end, half way house for boys who were approaching the level of adjustment which could lead to discharge.

Five or six boys were taken to the Bronx late Friday afternoon and returned Sunday afternoon. Apart from activities arranged at the house, they usually went into Manhattan to get a chance to see that New York City was something else than the Bronx. Our primary concern was to evaluate their capacity to manage themselves in their relations to others on these weekends. It was, therefore, an opportunity to be in a relatively unstructured environment quite different from the wards of the hospital. If the reasonably permissive atmosphere was met by acting out behavior, this indicated that improvement had not progressed far enough. Yet, often, they handled themselves and their contacts with others quite well, both to staff, in the neighborhood, and going around the city. One can say that of the 84 who participated in these programs, 74% who behaved "well" made a successful adjustment placement.

In considering placement, apart from the evaluation of the household to which they might go, we also had a fairly high percentage of boys for whom no home was available or where the personalities of its members were such as to be highly inappropriate for

rehabilitation due to alcoholism, narcotic addiction, prostitution and the like. When it is remembered that almost all (98%) of the boys came from broken homes, the need for some such provision is obvious. Attempts to utilize foster homes as an alternative were rarely successful. Many of these boys had been in anywhere from two to six such homes before admission. Partly our difficulties in placement stemmed from the obvious unsuitability of those selected to take the boys; partly they rarely maintained long-term stability even when the boy was beginning to make an adjustment. Most important, however, most foster parents refuse to take anything but young children and few will even consider the younger adolescents.

As for half-way houses for adolescents, these did not exist. We made repeated efforts, aided by the Director of the Hospital, Dr. Stanley, to obtain support from the State and, although the Department of Mental Hygiene recommended them, they never got past the budget proposal stage. One private group finally established one such home, for 15 boys from Rockland. Though it was a beautifully rehabilitated building, it became almost entirely custodial, with no systematic rehabilitation program to manage the transition from the home to outside living. This lack of meaningful activities resulted in many boys going A.W.O.L. ("eloping" is the hospital term). It quickly became overwhelmed by drug usage, a danger which almost any such facility is liable to encounter unless it has viable alternatives in operation.

In a survey conducted for the Department in 1967, we estimated that at least 30% had no alternative type of placement. These were boys able to be discharged with no relatives or other persons willing to take them. About one-third of the boys had been sent to Rockland by social welfare agencies, usually church supported. Such agencies received welfare payments from the City for care while they were there. When they were sent to Rockland, they were, in fact, taken off the "books", and new boys admitted in their place. This was contrary to the regulations of the Welfare Department, since agencies are supposed to take patients back as soon as the hospital says they are ready to return, and were so admonished. But the agencies were in a bind. Apart from their unwillingness to readmit such boys, since most agencies will not take the obviously severe cases in the first place, they had no way of knowing when the boy would be able to come back. So his place was already filled, albeit contrary to regulations.

A further problem with agency boys was that their social workers continued to maintain them on their case load. With appropriate concern for professional etiquette, the hospital social work departments passed on whatever information they might have to the agency social worker and, thereupon, abdicated further responsibility. Since hospital social workers were not allowed to make home visits (only our small staff did so), there was little useful information at hand except when relatives came out to the hospital to visit the boy and saw a hospital social worker, psychiatrist or charge attendant. Almost without exception, agency social workers were unwilling to accept

any recommendations as to what might be done if there was a chance of community placement. Thus, when the time came for such boys to leave the hospital, information we had collected went for naught.

Significant Elements in Rehabilitative Placement

Although this catalogue of difficulties in the way of managing rehabilitation and placement in a community setting may suggest that nothing could be accomplished, this was not the case. Before discussing what we succeeded in doing, and what we would like to have done (and would under different circumstances), it is important for the reader to be aware of the kinds of problems which are endemic in this field. Essentially, what is missing is any real coordination of effort by the multitudinous agencies, public and private, whose actions directly or indirectly affect the boy. However much we, and welfare organizations, preach the necessity of such coordination, the workings of bureaucracy (at every level and in every institution), their almost automatic reactions to potential infringement on territorial rights, will prevent this happening.

As I have commented on elsewhere, "As more of (the criteria for legitimizing involvement) appear as a consequence of legislative, medical or agency definitions, compounded by the sheer increase in numbers of clients and people concerned with them, these nodes around which organizations can form (and sub-sub segments of organizations) become separated in time and space to such a degree that they grow increasingly independent and stable -- rigid is probably a more accurate word. Each then endeavours to exercise a greater degree of control over that part of the client which it can cut off and label as its own. It does so because the need for internal stability, reflected in adequate salaries, pension funds, travel accounts, 'modern' facilities, all the technological expression of the interplay of the cultural dimensions within which the organization spreads its roots, is the hoped-for end product of this increase in control. Why we speak of a bureaucracy is, of course, because this term implies a closed system, inflexible, unyielding to external forces. In fact, it reacts to such pressures by becoming more of a hermit kingdom than before."⁵

What is needed, therefore, is a client (patient)-centered control. Rather than break up the elements of treatment and rehabilitation, with a series of unrelated organizations responsible for elements thereof, one passing the boy on to the next, like sending him to a state hospital when the going gets rough, complete responsibility has to be assumed by a single agency, from intake all the way through until successful placement has been achieved, when the client (patient) is able to function on his own. This means integration of agencies and, where needed, their subordination to a single organization which has primary responsibility. It does not mean that the responsible agency should abdicate during the period when some special program of treatment or training is required.

For continuity of relationship with the individual has to be defined as continuous interaction by the same individuals (given the inevitable personnel turnover). Only through this is stability in adjustment achievable; once it develops, it is so maintained. And continuity of relationship inevitably requires continuity of evaluation. At the present time, each unit tries to develop its own intake procedures, its own evaluation (insofar as this exists) and its own criteria for discharge. Not merely does this constant repetition at each point of transition waste time and effort, discouraging the client whose achievement of a level of adjustment should be immediately reinforced; otherwise it will die away for lack of outlet to utilize it. It also is almost entirely discontinuous.

What is done by one agency is, commonly, incompatible with what the next one does. Moreover, many agencies, setting out to provide a limited type of service, soon try to provide all services, without adequate financial resources, personnel, or methods of treatment and rehabilitation, due to the almost inevitable push for bureaucratic growth. As this expands, it becomes more difficult for a single, total program to be worked out and administered for the individual patient, though, in theory, it should. Usually, the moment reaction patterns become too severe for its personnel to handle, or opportunities for placement are not systematically investigated and evaluated, the agency is forced to shove the individual out, hopefully to some other organization able to rescue them from the consequences of their own failures.

The Need For Innovative Development

I have elsewhere discussed in more detail the importance of developing innovative organizational designs or integrative systems through which these bureaucratic blocks and bottlenecks can be eliminated.^{6,7} In our own case, with limited resources, we have been experimenting with weekend half-way houses, workshop community centers and the like, to try to make it possible to manage this continuity of care (interactionally) which makes up the therapy-rehabilitation system. To a considerable extent, this requires legislative action (following on the increasingly frequent judicial decisions) which will eliminate professional territoriality, and the techniques used to reinforce their positions, to require single-client (patient) responsibility throughout the whole process.

Thus we will have to accept the concept of total individual management. It will also be necessary to eliminate the educational and other experiential standards which are used to protect the untouchability of professional status. This is not to say that professionals are, inso facto, unable to be or to become flexible. Yet whatever the idiosyncratic potential of a given person, the institutional framework of professionalism, whether it be in

psychiatry, psychology, education, rehabilitation, social work and so on, is too easily threatened. Innovative individuals within these fields are usually prevented, in the end, from achieving even minor revolutions. The professional societies are not about to give up the perquisites of position and advancement so painfully won over many years.

Where this leads to we shall shortly see, but today it is quite clear that the professional manpower necessary to deal with a problem of these dimensions is in no sense available (even if the techniques they possessed were maximally effective). It is no solution to assume that by recruiting paraprofessionals (to do the scut work), professional superordination can be maintained. So innovations have to be imposed from the outside. If this is to be done, we have to look at the total therapy-rehabilitation requirements of these adolescents to see how unitary responsibility can be managed. We have to do this in these ghetto areas, using available individuals and the small groups which they constitute. But this is quite different from permitting the professionals "to cast their burdens" on those evanescent "community" groups. Once "they" exercise responsibility, the professional is deceived if he thinks that he can still maintain his own position vis-a-vis the client (patient), directing the "community" in the ways in which its representatives should go.⁸

The Criterion of Successful Therapy-Rehabilitation

This may appear a long way around to get to the question, how do we know that what we did was beneficial? Yet it was necessary to sketch the kinds of problems which one encounters in any such program because the criterion, successful discharge to the community equals absence of recidivism (to the institutions from which the discharge occurred), may or may not have any validity.

There were five components of our program, each with its built-in potentials and its limitations as far as control is concerned. As we have seen, they were a) programmed interaction therapy in a two-person situation; b) a less formally programmed group situation, with four boys and a staff member, without, at that time, the recording devices necessary to measure group interaction; c) the sheltered workshop; d) classroom education; and e) the transitional programs of weekend half-way house visits, home visits, and the like which led to placement. To each of these, we have put the question, what degree of improvement did we achieve in the boy's performance as a consequence of his participation?

We have already commented on the fact that each of these encountered interferences, sometimes multiple. All of them were, of course, interfered with by the occasional, arbitrarily chosen periods when boys would be sent home, sometimes during the summer (logical in the mores of middle class society), or because the parent was

willing to take them, or because they had improved in the psychiatrist's view and the pressure on him to discharge was too great. Further, we saw that psychoactive drugs frequently interfered with all of these, being used only occasionally for non-disciplinary purposes. The workshop was by no means always able to obtain work; frequently what was obtained was inappropriate for its rehabilitation potential. In education, in spite of many battles, only for a brief period were we able to take over the academic elements of the program, losing out on the control of what went on in "the shops" and, more important, as studies of many school systems, including that of New York City have demonstrated, plagued by the summer "vacation" period which inevitably meant a marked fall-off in achievement level.⁹ Thus a new beginning had to be made each fall to get the students back up to where they were in June.

With all these problems, we have seen that improvement was obtained, although it was also evident that, for many, improvement in workshop performance or in achievement level had to be preceded by improvement in interaction measurements. To obtain an over-all appraisal of results, we are confronted with the necessity of using criteria for evaluating improvement which have two facets. 1) During the course of the treatment were there significant changes in the boy's capacity to adjust to others as measured both in the therapy sessions and in their carry-over to his observed adjustments within the hospital? And 2), Granted the imperfect character of the rehabilitation and placement plan (often hastily put together because of decision to discharge in spite of inadequate evidence of sustained improvement), did he manage to maintain a satisfactory adjustment in the community during the two years (at least) in which we were able to maintain contact? In other words, is he working or attending school without causing disturbance, has he managed to avoid conflict with the authorities, whether they are the police, school officials or employers? Recognizing that his program was too often abruptly truncated and his maximum level of performance not achieved, is he getting along reasonably well in the ghetto environment to which he had to be returned?

Surprisingly, on both counts, results were remarkably good. I have eliminated almost half of the fifty boys who were peremptorily discharged by the administration on the grounds that they would "be much better off in correctional facilities where, after all, there was much more available than Rockland could offer." That expression of the attitude of psychiatrists hardly needs comment. Those eliminated from the total had not been long enough in the program for changes to be expected. We thus ended up with approximately 300 young people on whom we had data, not simply on their progress in the hospital, but during the roughly two years of follow up.

With only two exceptions, both of whom were transferred to adult buildings against our advice before we could try out another program of interaction therapy, the others all showed significant improvement in their capacity to adjust to others, not merely in treatment, educational and workshop situations, but in everyday life

in the hospital. Computer work-ups, to be detailed in the final technical report, through which the many interaction variables shown in the tables are parametrically combined, provide clear evidence from the analysis of non-linear equations of the interactional rhythms.

It should be said, however, that in the imperfect and frustrating administrative world of a state hospital, there were many interferences with program. Boys were sent on home visits, qualified or not, particularly in the summer, therefore setting back therapeutic progress. Fluctuations in staff and the need for replacement and training could not be avoided when everyone knew about the time limits, and uncertainties, of government grants. These added to the turnover one would normally expect. With a limited staff, this caused unwanted fluctuations in the case load which should be maintained on a constant basis. Yet it is encouraging to see that improvement did occur consistently, even if some could have progressed much further if we had been given more time to work with them.

It was also heartening to find out that the boys did make a good adjustment in the community. 90% managed to sustain themselves without recidivism or involvements with the law. Some went back to school, others got jobs, often not what they were best fitted for. However, it must be emphasized that our own presence in the South Bronx on a continuing basis made it possible for relationships established in the adolescent unit to be maintained. Obviously, in a rigorous design, this would be an important confounding factor, but we regarded this as an essential component of the program. Boys would come to the center from all over the city. Having a place to go where they knew they were welcome was definitely important. A few had brief sessions with one of the counselors with whom they worked, but this was rare.

Some of the boys worked in the shop, but because of the ups and downs in available sub-contracts, the aid their earnings provided was temporary, since we did not have enough volume to generate sufficient permanent jobs. In any case, our first commitment had to be to boys referred by community agencies.

Of the 10% remaining, we can't say whether they functioned satisfactorily. Three died, perhaps a dozen went back to Puerto Rico, five had difficulties and thus could not be regarded as anything other than failures, and the rest we were unable to trace. We do not know, of course, whether in the 90% problems occurred later, in other words, whether they slid back into old ways. With the earliest graduates, this did not occur up through the ending of the workshop center of the South Bronx, thus doubling the years they stayed out of trouble.

Chapter 11

Significance of the Programmed Interaction Therapy-Rehabilitation System

For those who may be considering using the procedures outlined in this report of what we did, it may be helpful to comment on some of the administrative and operating findings which bear on success. For in considering the installation of a program, it is always necessary to be able to explain its rationale in simple terms, both to those who participate and to those who support it. It is also relevant to know what restrictions might be imposed by the need to recruit (and thus to find) the appropriate professionals and how much the methods to be employed make it possible to rely on properly selected non-professional personnel, capable of being trained within the project.

It is already obvious that I became increasingly disenchanted with those with professional backgrounds. Granted that the sample was too small to make sweeping statements. Certainly one cannot select out particular professions as presenting more extreme difficulties than any others. However, it was evident, from the point of view of the responsibility of management, that each of those possessing professional or academic qualifications, at the levels required by the Civil Service qualifications, to which Federally-supported grants should (but do not have to) adhere, were incompetent by ordinary "business" standards. And this was true of those in higher administrative posts. This is not to say that the non-professionals, with or without college background (most did not have it), were always jewels beyond price. But at least, not having acquired the professional role, that self-definition of what was appropriate for them to do and what was not, they were more flexible, more willing to carry out a variety of assignments without saying "that's not my job".

Though horrendous tales are usually told about trade union "mentality", and there are, certainly, extraordinary jurisdiction disputes, the unwillingness of a plumber to perform some simple task because "it is an electrician's work" is more easily understood in the light of the erratic aspects of employment in the construction trades. But our professionals, in the jobs from which they came and in the experience of their fellow professionals, were accustomed to year-round, salaried positions. Accordingly, it was hard to accept the rigid barriers they interposed and, in general, their lack of interest in anything new, innovative, which could not be fitted neatly into their already well-grooved patterns of behavior, and the concepts by which these were rationalized.

Each of those in these professional and academic categories successively indicated the limits of the responsibility they would accept. They were incapable of seeing the unreality of their demands for other professionals (which no small project could afford)

to be hired to supplement what they were, in theory, hired to do themselves. Thus, it became obvious that we were far better off to rely entirely on non-professionals, except where special skills and training were essential, as in computer programming. They could learn to do what was required with precision, interest and understanding, and this, as we shall shortly discuss, was made possible by the fact that we could rely almost entirely on interaction measurement.

However, in looking back on our development, it is obvious that under the pressure which grant-supported projects produce, and this is a fundamental weakness of the whole grant technology of the Federal government (and for that matter of private foundations), we too often felt forced to deviate from known standards for selection and placement of staff because of the time limits which pressure for evidence of progress (reports) created for us. In the last few years, budgetary uncertainties have been such that one never knows whether a grant, even one which has started, will continue to be funded. Most common, however, is the approval of grants by study committees and councils, without funding being made available until long after the presumed decision. This means that one cannot recruit in good faith until the actual evidence of funding appears; one has only a brief period, usually, before those first year progress reports are called for. The fact that training takes time, that building an effective staff is not done overnight, is given lip-service; but it is also obvious that "results", if not forthcoming in sufficient quantity, will cause the project director (investigator) to run the risk of losing his grant.

So one makes exceptions in order to get a job filled and work begun. This is particularly sad when we have, as we do, well-defined and validated criteria for selection for many of the jobs we need done. But until the Federal government begins to finance programs on a long term basis, excessive administrative waste is a consequence. Nevertheless, in the course of our experience, it became evident that the professional knowledge and skills which were deemed special to each type of profession were easily acquired, or already common knowledge to those with any curiosity about urban living. Professional roles or techniques were neither clearly defined nor sophisticated. Essentially, they were rationalizations of the way a particular personality found it comfortable to adjust to other people. Hence the non-professionals, who often came from the same backgrounds as the adolescents, and who had no professional caste rules to live up to, began to do a better job and to take on more and more responsibility. And this performance deficit was true for the whole professional range -- social workers, vocational rehabilitation counselors, teachers and all the rest.

Moreover, both practically and in terms of providing opportunity, the promotional potentials and the avenues which could be followed by blacks and Puerto Ricans (not that we exclude whites) gave them much greater flexibility (and the possibility of meaningful advancement) than professionals who, by necessity, come in close to the

top of their available salary range where, unless they become administrators, they are locked in. Nor can it be said that this was a consequence of ethnic derivation, since middle class black professionals (we had no Puerto Ricans in this category) were professionals first and foremost, and showed little or no difference from their white colleagues.

Building "Professionalism" Into The Computer

Now the reason for the relative success of the untrained non-professionals, sometimes with a high school education, sometimes with two years of college, occasionally a college degree, was the existence of operationally defined procedures to be followed. As already described, beginning with the diagnostic interview and continuing with the treatment sessions, all interview patterns were programmed and the programming made visible through the use of the ORL-347 Interaction Control System. In addition, of course, the interaction was measured continuously throughout the session. The magnetic tapes thus produced by the ORL-346 Event Recorder were run through the computer system (ORL 337 and IBM 360-44) and the sequence of values printed out.

By inspection, the interviewer-therapist and the supervisor could compare the actual values with those programmed for that particular interview to determine whether significant deviations occurred. Not only did this provide a control on performance, but it immediately could be used if further training in managing difficult situations was required. Later, as already described in Chapter 3, the procedure (protocol) to be followed in a particular session was stored in the computer. The actual values then could be compared one by one with the stored model, so that the comparison was immediately available after the recorded data were run through the simulation process.

The training process began with learning to make the discriminations of beginnings and endings of action patterns and to record the on-going interaction. Once this was mastered, almost coterminously, the interviewer began to learn how to manage the time intervals of durations and frequencies -- aided by the Interview Control System visual display -- and also to deal with the non-directive content used in the response intervals. As the trainee improves in competence, he began to get a more thorough understanding of the various patterns making up the temperamental reactions and how these manifest themselves in the on-going life situation.

This led up to working with a limited number of patients, planning the therapeutic program from the evidence of the diagnostic interview for presentation to the supervisor for approval. After each session, results were reviewed and alterations decided on, if they should prove necessary. Again, this whole analytic process

has been programmed for computer simulation, as described in Chapter 6. Diagnostic analysis and the prescription of the therapeutic program is now made available, in the Bronx, to the interviewer. Feedback, after each therapeutic session, determines the degree to which improvement (changes in values of the variables in the direction of normal ranges) is actually taking place.

A similar process was developed both for group therapeutic sessions and for the classroom (on the emotional-interactional side), but we were only able to obtain delivery of the Group Recording System from ORL towards the end of the project. The priorities of completing the programs for pairs, and the limitations on available observers to operate the unit, restricted what we could do with it. However, we had begun computer simulation of interaction measurement variables to make it possible to maintain controls on the programs decided on and to evaluate the progress made in so using them. So with groups, we will also build the analysis into the computer and so maximize the effectiveness of the individuals carrying out the programs decided on. In the same way, workshop data was computerized, both the figures on productivity, time spent working, time off the job, as well as the interactional contexts of the job designs themselves. Workshop management, with its primary focus on improvement in the patient, can be systematized within a total analytical structure.

I have earlier mentioned the extension of these techniques to the evaluation of the home situation, school adjustment, job placement and performance and the like. In all these areas, professionalism is built into the computer; one can then properly utilize systems analysis and evaluate the cost-effectiveness of the particular segments of treatment and rehabilitation on given individuals in quantitative, mathematical terms.^{1,2} This means that what you should hire are individuals who have the personality and temperament characteristics to carry out the therapeutic programs, others perhaps to persuade (sell) potential employers, or school officials or whoever on individual boys, and still others who can make capable group leaders as shop foremen, teachers, etc. Both the training methods and the criteria used for selection are long established. They are being reworked in manual form and should be available before the end of the year.

Elimination of Interdisciplinary Communication Problems

An additional, but major benefit, of this translation of professionalism into the computer is that it eliminates the communication difficulties which are endemic when a group of professionals, representing different disciplines, are brought together. All members of the staff are obtaining data which consists of activity and interaction measurements. Even such

qualitative areas as the acquisition of a symbolic repertoire in the classroom or carrying out the motions of a job are interdependent with the evaluation of improvement. There is thus no professional Tower of Babel. One does not have to spend endless time trying to interpret from one set of conceptual frameworks and its symbolic statements to the next. The referents of discussion are the measurements, organized in such form that discussion is relevant to particular variables and particular changes. Thus, as the capacity for adjustment improves significantly and stabilizes, staff discussions can take the form of evaluating the kinds of jobs appropriate for this individual and the kind of social environment which will enable him to function without major disturbance. Thus one asks, "let's find out if...?" about possibilities, using the same criteria to get the answers.

This is no concern with "milieu" approaches, whether "ego" is present in the "equation" or not. What is called milieu therapy is based neither on direct observation and measurement of the "milieu", nor of the individual in it. It does encourage a major philosophical tenet -- an ecological one -- namely, that both the individual personality and the environmental situation in which he finds himself have to be jointly considered. Control of what goes on, or differentiating one milieu from another, except in the most general, reified terms, are non-existent. Milieu approaches appear to be a middle-class projection of the staff's values, and the symbols and trappings thereof, to a physical situation. These are not universals, witness the "discovery" that perhaps (!) all patients are not benefited by the "open door" policy, so dear to the heart of the milieuists.^{3,4}

The human being, whether he be a patient or not, is a remarkably complex system of variables, and the manifestation of these variables in his activities and interactions is even more complicated, as I have elsewhere discussed at length.⁵ One can simplify the formulation, but only by using precise measurements within the framework of differential equations. This enables us to deal with rates of change of rhythms and evaluate the effects of stress which result from entrainment by others as each person's rhythms clash, seeking adjustment.

One does not simplify phenomena by vague and ambiguous categorizations whose referents cannot be established by any replicable means. This way leads to confusion, for the patient and for the staff, since man does not live by foggy generalizations, though he may use them to "explain" what he does. Granted far more effort and care is required in using measurements in the exact science sense if we are to isolate the variables and determine their functional relationships. But if we wish to bring about improvement in a patient and see our predictions work out, there is no substitute for observation and measurement, for these, after all, are the true significant of the clinical approach.

Base of Acceptance of the Approach

Apart from the effectiveness of the procedure, judged by the accuracy with which predictions can be made as to the effects of particular treatment-rehabilitation programs designed for particular patients, it is important to comment on its acceptability to patients, staff and people in the areas in which we work.

In the first place, because we are dealing only with time measurements of activity and interaction, preoccupation with the acquired capacity to learn, recognize and manipulate symbols or to reveal one's "inner thoughts" through free association, tests or questionnaires, is completely divorced from what goes on. Since we limit ourselves to the data of behavioral biology, or anthropology if you want to focus on man, the techniques of observation and measurement are both cross-cultural and cross-species (since by identifying the repertoire of fixed action patterns of a particular species, activity and interaction measurements are equivalent). Hence questions and attributions of middle-class, lower-class, ethnic differences, and the like, are irrelevant for our purposes.

In addition, the criteria of time and frequency are easy to understand and accept. One does not have to describe an individual in psychoanalytic or psychiatric terms with all their ambivalent interpretations. What is observable in every-day situations, that is, through repeated observations of an individual with others, tells you precisely what a diagnostic interview obtains in a much briefer time, hence more economically. The fact that someone rarely takes the initiative, allowing others to initiate to him may or may not have significance for his adjustment. Not only are many other interaction variables involved which can "make up for it", there are many situations which occur with people whose rate of initiating is high, and for whom the low initiator is perfect foil. Adjustment problems then arise only if he, inadvertently, is put in a situation where high initiative is a necessity or where there are no other persons who start things off.

Clearly, there can be no question of invasion of privacy, since what is measured, even the violence of the individual's reactions is publicly displayed, and is thus public evidence.⁶ It is a characteristic to be noted, or to be reacted to, as we encounter him from day to day. Moreover, though in psychiatric universes, we speak of therapy or treatment and, in the more general context of return to the community, we refer to rehabilitation, it is equally legitimate and, in terms of the biological processes involved, more appropriate, to recognize that what we are doing is training someone to manage his adjustments, based on his own special, idiosyncratic characteristics. He, therefore, learns new patterns of interaction, he learns to recognize the cues which indicate that others are liable to disturb him or adjust to him and he to them. He also learns how to utilize the contexts of situation

which are available to maximize his adaptations to his world and to minimize its stresses. And this is training.

In our workshop center in the Southern Bronx, the beginning of training, starting with the diagnostic interview, is explicitly intended to find out what kind of work (and life) situations the boy can potentially manage. It then concerns itself with how he is to improve in so doing, and so points the way to a vocational course where his personality and temperamental characteristics can be best utilized within a choice of jobs. Training and evaluation come after he starts to work, and earns money at so doing. Surprisingly, in this setting, the boys are eager for the diagnostic interview to be conducted, for handicaps and potentials to be discussed, and a training program started.

Coincident with this, of course, we recognize obvious cognitive deficits (in the 3 r's). Within our present financial limits, we try to provide vocationally oriented education to alleviate these problems, but not education in its academic stereotypes. Interest in this area comes after programmed interaction training is under way and the boy begins to evidence improvement. He then begins to see how he can increase his opportunity to choose between appropriate types of jobs by acquiring these educational competences.

If, thereafter, once he is placed and doing well, he becomes interested in acquiring the formal evidences of academic accomplishment, so much the better. To reverse the order, in our judgment, to insist that school achievement comes first, is liable to destroy his acquisition of greater stability and capacity to adjust. Progress in the work situation requires the continuous reinforcement, not of a single element, but of the use and expansion of a series of interaction forms which will constitute his "role equipment" for the future.

As mentioned earlier in various contexts, the use of cash incentives, set to make it possible to earn the minimum wage (at least), can be done more easily in our workshop community in the Bronx than in a hospital. Its importance lies in the ways it facilitates the individual's capacity to interact in a number of contexts which his particular cultural framework imposes. To earn money, to be able to spend it for clothing, food and other necessities, often, of course, to supplement the household store, puts him in a favorable interactional position.

Not merely does the availability of money create reciprocal interactional bonds with others, but it provides a repetitive characteristic (the weekly paycheck) which tends to increase and stabilize his relationships. To be able to supplement welfare payments, to be able, ultimately, to make it, financially, on his own reduces the severity of the stresses of always being on the receiving end. Not that there may not be spending which middle class values might categorize as foolish, not that there

may not be a chance of spending for drugs or alcohol, etc. But the fact that there is a steady source of income which can be lost by acting out and a group of individuals who provide a variety of learning and accomplishment opportunities diminishes the risk, which is there, no doubt, for all of us.

Moreover, just as the staff of non-professionals operate more professionally thanks to the availability of the computer process so, with the patients at the hospital and the employees in the workshop community center, a common discourse and common referents to behavior patterns, like one boy's acting-out reactions, becomes part of the "culture". And this is not a mere mouthing of labels. It is an acquisition of techniques. Skills in mastering the techniques, using them well in the appropriate situation, begin to be regarded highly. The boy is considered "sharp", "cool", "with it" -- whatever the linguistic idioms of the particular sub-culture represented.

Given the uneven progress of the program within the constraints of hospitalization and the inability to administer (control) all elements of the therapy-rehabilitation system without constant bureaucratic interference, the residential treatment center at Rockland, which we had envisaged, could never be established. Budgetary uncertainties, professional conflicts, lack of adequate and firm organizational definition of responsibilities, all combined to interrupt, derail (usually temporarily), and otherwise impede the full structured operation of the program itself. This was a major waste of effort because residential treatment on an intensive basis, closely integrated organizationally with community programs, can deal with the more severe cases much more rapidly. As I have emphasized, this requires treatment-rehabilitation to be a single system under single responsibility.

Yet even though the destruction of the program, and the hoped-for adolescent center at Rockland, has come about, however irrational the decisions appear to be, our growing experience in the workshop community center in the Bronx shows that many of the sociopaths, otherwise condemned to an inevitable course downward -- increasingly becoming a "clear and present danger" to society -- can be attracted to such a center for the simple reason that they can get a steady job. They do not come for help, they do not admit the severity of their problems; the sociopath and psychopath has well-established defenses against such revelation. But it is clear that they need some kind of interactional universe through which they can achieve stability. Once they have the chance of working steadily, once they learn through a training program how to handle themselves so they can get a better job, they become "hooked", but this time in terms of beginning to realize their own potential.

And though, as I pointed out at the beginning, psychiatric dogma stigmatizes them as shallow, unable to establish strong relationships, unfeeling and all the rest, the fact is that the

real difficulty is that they feel (react) too strongly; only they have learned to mask this feeling under an apparently impenetrable exterior. But look at their histories. 22% made overt, "for real" attempts to commit suicide, apart from all those who talked of it and, in themselves, may be at serious risk. "Affectless" individuals do not commit suicide, assuming, of course, that such a label had any meaning.

Perhaps if there was severe central nervous system damage, we might find instances of deatomizing or depersonalization, but this would require that the significant relationships of, and to, the autonomic nervous system and the bodily states it controls had been severed. This may be the stuff of science fiction for the 21st century; today, however, even the most severe cases are clearly driven by their autonomic-interactional components. Over a long period (in prison), habituation can be established and the patterns appear unshakeable. Yet I suspect (as do others) that only for the very few will such rigidities be likely to prove impervious to whatever we try to do. For the rest, for all those sociopaths and psychopaths, the temperamental disorders making up what I have called the chronic autonomic-interactional syndrome, there is the real possibility that we can modify their condition and reduce their vulnerability to stress. Certainly for the kinds of adolescents herein described, we can be effective, providing we accept as reality that the old psychiatric ways do not work and that new innovative approaches, based on biology, appear to show the way for broader application in all societies.

Epilogue: The Best Laid Plans...

Almost coterminous with ending this manuscript, I received a letter from the Social and Rehabilitation Service terminating the Workshop for Youth grant on the grounds that "since it had been so successful, we should have no difficulties obtaining alternate financing." That Mr. Nixon and his OMB, and Mr. Ford thereafter, were chopping off lots of other projects was no consolation. The Workshop for Youth was not self-supporting, though we could see how this might be attained in a couple of years if we could continue. New York City's Department of Mental Health and Mental Retardation expressed interest but, first, they were forced to use all available resources to provide rescue operations for the patients Mr. Rockefeller and Dr. Allan Miller were discharging to the ghettos and skid row and, within a year, the roof fell in on the City itself. We tried desperately, with a few of the staff sticking to the sinking vessel, working for nothing, particularly Mr. Carl Jones, the foreman-manager, but to no avail.

As a consequence, the workshop was shut down, though for a brief period we still had an NIMH grant through which we could continue our procedural and mathematical work. This too became unfunded, though it still remains technically an active grant, but without support. We have developed with meager resources a remarkably useful system for

cost-effectiveness evaluation of individual patient-client care, designed for very inexpensive mini-computers, though much of the computer programming still needs to be done. Some of the other manuals mentioned, hopefully to be completed, are still in a state of suspended animation and, of course, the technical report on these data is in a similar state. So time goes on, and though we hope we can persevere, the sands are running out.

References
Chapter 1

1. Redlich, F.C. and D.X. Freedman, The Theory and Practice of Psychiatry, Basic Books, Inc., 1966.
2. *ibid.*
3. It is, of course, true that the Federal District Court of the District of Columbia, Judge Bazelon presiding (a former president of the American Orthopsychiatric Association) held that this rule was outmoded, but few jurisdictions have followed this lead.
4. The International Journal of the Addictions, 1971.
5. Mendelson, J.H., "Biologic Concomitants of Alcoholism," New England Journal of Medicine, 283, 1-19, 1970.
6. Editorial, The International Journal of the Addictions, 1971.
7. The Annals of the American Academy of Political and Social Science, "Patterns of Violence," 364, 1966.
8. FBI Report, New York Times.
9. Tooth, Geoffrey, "The Aggressive Psychopathic Offender," Lancet, 42-45, 1969.
10. Thompson, George N., "Perspectives in Biological Psychiatry," (paper presented at Annual Meeting of the Society of Biological Psychiatry, San Francisco, 1970).
11. Kubie, L.S., "Pitfalls of Community Psychiatry," Archives of General Psychiatry, 18, 257-66, 1968.
12. Garner, H.H., "Hospitalization - A Desirable Procedure for Mental Illness," Comprehensive Psychiatry, 9(5):465-73, 1968.
13. Lobbs, W.H., "Methadone Treatment of Heroin Addicts," Journal of the American Medical Association, 218(10):1536-541, 1971.
14. Schefflen, Albert E., "Human Communication: Behavioral Programs and Their Integration in Interaction," Behavioral Science, 13(1):44-55, 1968.
15. Ogden, C.K. and I.A. Richards, The Meaning of Meaning, New York: Harcourt, Brace and World, 1927.
16. Malinowski, B., "The Problem of Meaning in Primitive Language," (Appendix I) in The Meaning of Meaning, New York: Harcourt, Brace and World, 1927 (see pp: 255-312).

References - Chapter 1 (continued)

17. Chapple, E.D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970.
18. Lustman, S.L., "Behavior Disorders in Childhood and Adolescence," (see particularly Chapter 20 in The Theory and Practice of Psychiatry, by Redlich, F.C. and D.X. Freedman, 1966).
19. Yamamoto, J. and M.K. Goin, "On the Treatment of the Poor," American Journal of Psychiatry, 122(3):267-71, 1965.
20. Malmquist, C.P., "Psychiatric Perspectives on the Socially-Disadvantaged Child," Comprehensive Psychiatry, 6(3): 176-83, 1965.
21. Thompson, G.N., "Perspectives in Biological Psychiatry," (paper presented at Annual Meeting of the Society of Biological Psychiatry, San Francisco, 1970).
22. *ibid.*
23. Robins, Lee M., Deviant Children Grown Up, Williams and Wilkins Company, 1966 (see particularly Chapter 2).
24. Morrison, J.R. and M.A. Stewart, "A Family Study of the Hyperactive Child Syndrome," Biological Psychiatry, 3, 189-95, 1971.
25. Fish, Barbara, "Drug Use in Psychiatric Disorders of Children," American Journal of Psychiatry, 124(8):31-36, 1968.
26. Yamamoto, J. and M.K. Goin, "On the Treatment of the Poor," American Journal of Psychiatry, 122(3):267-71, 1965.
27. Smith, R.J., "A Closer Look at Encounter Therapies," International Journal of Group Psychotherapy, 20(2):192-209, 1970.
28. Edwards, G., C. Mensman, A. Hawker and V. Williamson, "Who Goes to Alcoholics Anonymous?" Lancet, 1-8, 1966.
29. Glaser, J.B., "Gaudenzia, Incorporated: Historical and Theoretical Background of a Self-help Addiction Treatment Program," The International Journal of the Addictions, 6(4):615-26, 1971.
30. Whyte, William F., "Leadership and Group Participation," Industrial and Labor Relations, Bulletin 24, 1-49, May 1953.
31. Jones, Maxwell, The Therapeutic Community, New York: Basic Books, Inc., 1953.
32. Schwartz, Stuart, "Group Therapy, Social Competence and Hospital Stay," American Journal of Psychiatry, 118, 559-61, 1968.

References - Chapter 1 (continued-2)

33. Fischer, A. and M.R. Weinstein, "Mental Hospitals, Prestige, and the Image of Enlightenment," Archives of General Psychiatry, 25, 41-48, 1971.
34. Torrey, Fuller, "Spiritualists and Shamans as Psycho-Therapists: An Account of Original Anthropological Sin," (paper presented American Anthropological Association, San Diego, 1970).
35. Masterson, J.F., "The Symptomatic Adolescent Five Years Later: He Didn't Grow Out of It," American Journal of Psychiatry, 123(11):1330-345, 1967.
36. Glueck, S. and E. Glueck, Juvenile Delinquents Grown Up, The Common Wealth Fund, New York, 1940.
37. Robins, Lee H., Deviant Children Grown Up, Williams and Wilkins Company, 1966.
38. Maddocks, P.D., "A Five Year Follow Up of Untreated Psychopaths," British Journal of Psychiatry, 116(534):511-15, 1970.
39. Chwast, J., "Depressive Reactions as Manifested Among Adolescent Delinquents," American Journal of Psychotherapy, 21(3): 575-84, 1967.
40. Thompson, G.W., "Perspectives in Biological Psychiatry," (paper presented at Annual Meeting of the Society of Biological Psychiatry, San Francisco, 1970).
41. It is worth pointing out that a psychoanalyst, August Aichhorn, a disciple and contemporary of Freud used ad hoc psycho-analytic procedures for such children. See Aichhorn, August, Wayward Youth, New York: The Viking Press, Inc., 1935.

References
Chapter 2

1. Robins, Lee M., Deviant Children Grown Up, Williams and Wilkins Co., 1966.
2. Chwast, Jacob, "Depressive Reactions as Manifested Among Adolescent Delinquents," American Journal of Psychotherapy, 21(3):575-84, 1967.
3. Spergel, Irving, Street Gang Work: Theory and Practice, Mass.: Addison-Wesley Publishing Co., 1966.

References
Chapter 3

1. Chapple, Eliot D., "Toward A Mathematical Model of Interaction: Some Preliminary Considerations," in Explorations in Mathematical Anthropology, Paul Kay, ed., Cambridge: MIT Press, 1971.
2. ———, "Measuring Human Relations: An Introduction to the Study of the Interaction of Individuals," Genetic Psychology Monographs, 22, 3-147, 1940.
3. Basmajian, John V., "Electromyography Comes of Age," Science, 176, 603-14, 1972.
4. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Chapter 4).
5. Hess, Eckard, "Ethology: An Approach Toward the Complete Analysis of Behavior," in New Directions in Psychology I., New York: Holt, Rinehart and Winston, pp. 159-266, 1966.
6. Pittendrigh, C.S., "Circadian Rhythms and the Circadian Organization of Living Systems," Cold Spring Harbor Symposia on Quantitative Biology, New York: Long Island Biological Association, 25, 159-81, 1960.
7. Iberall, A.S. and S.Z. Cardon, "Control in Biological Systems," New York Academy of Sciences, 117(1): 445-518, 1964.
8. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Part I).
9. Cannon, Walter B., Bodily Changes in Fear, Hunger, Pain and Rage, 2nd Ed., Boston, Mass: Brandford, 1953.
10. Chapple, Eliot D., "The Interaction Chronograph: Its Evolution and Present Application," Personnel, 25, 295-307, 1949.
11. ———, "Personality Differences as Described by Invariant Properties of Individuals in Interaction," Proceedings of the National Academy of Sciences, 26(1): 10-166, 1940.
12. Chapple, E.D. and E. Lindemann, "Clinical Implications of Measurements of Interaction Rates in Psychiatric Interviews," Applied Anthropology, 1(2): 1-11, 1942.
13. Chapple, Eliot D., "The Interaction Chronograph: Its Evolution and Present Application," Personnel, 25, 295-307, 1949.
14. *ibid.*

References - Chapter 3 (continued)

15. Matarazzo, Joseph, "A Technique for Studying Changes in Interview Behavior," in Research in Psychotherapy, Washington, D.C.: American Psychological Association, 1957.
16. Roethlisberger, F.H. and W. Dickson, Management and the Worker, Cambridge, Mass.: Harvard University Press, 1939.
17. Rogers, C.R., Counseling and Psychotherapy, Boston, Mass.: Houghton Mufflin, 1942.
18. Chapple, Eliot D., "The Interaction Chronograph: Its Evolution and Present Application," Personnel, 25, 295-307, 1949.
19. Manufactured by Organization Research Laboratories, Inc., Noroton, Connecticut.
20. Goldman-Eisler, Frieda, Psycholinguistics Experiments in Spontaneous Speech, New York: Academic Press, 1968.
21. Phillips, Jeanne S., J.D. Matarazzo, R.G. Matarazzo and G. Saslow, "Observer Reliability of Interaction Patterns During Interviews," Journal of Consulting Psychology, 21(3): 269-75, 1957.

References
Chapter 4

1. Chapple, Eliot D., "Toward a Mathematical Model of Interaction: Some Preliminary Consideration," in Explorations in Mathematical Anthropology, Paul Kay, ed., Cambridge: MIT Press, 1971.
2. For an extended account, apart from the above, see my book, Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Part I).
3. Chapple, Eliot D., "Toward a Mathematical Model of Interaction: Some Preliminary Consideration," in Explorations in Mathematical Anthropology, Paul Kay, ed., Cambridge: MIT Press, 1971.
4. ———, "Experimental Production of Transients in Human Interaction," Nature, 228(5272):630-33, 1970.
5. Chapple, E.D. and Y.Y. Lui, "Populations of Coupled Non-Linear Oscillators in Anthropological Biology Systems," (presented at Systems, Man and Cybernetics Society Conference, Institute of Electrical and Electronic Engineers, Inc., Washington, D.C., 1976).
6. Stier, T.J.B., "Spontaneous Activity in Mice," Journal of General Psychology, 4, 67-101, 1930.
7. Escalona, Sibylle K., "Some Determinants of Individual Differences," Transactions of the New York Academy of Sciences, 802-16, 1965.
8. Chess, Stella, "Individuality and Baby Care," Developmental Medicine and Child Neurology, 11(6):749-54, 1969.
9. Thomas, Alexander, S. Chess and H.G. Birch, Temperament and Behavior Disorders in Children, New York: New York University Press, 1968.
10. For a fuller discussion, see my book, Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see, in particular, Chapters 4,5,6).
11. *ibid.*
12. Chapple, Eliot D. and G. Donald, "An Evaluation of Department Store Salespeople by the Interaction Chronograph," Journal of Marketing, 173-87, 1947.
13. Inter alia, see Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Chapter 14).
14. Chapple, E.D. and C.S. Coon, Principles of Anthropology, New York: Henry Holt, 1942.

References - Chapter 4 (continued)

15. Chapple, E.D., M.F. Chapple and J.A. Repp, "Behavioral Definitions of Personality and Temperament Characteristics," Human Organization, 13(4):34-39, 1955.
16. Chapple, E.D., "The Man, the Job and the Organization," Personnel, 34, 8-20, 1958.
17. Chapple, E.D. and L.R. Sayles, The Measure of Management, New York: Macmillan, 1961.
18. Chapple, E.D., A.S. Chamberlain, A.H. Esser and H.S. Kline, "The Measurement of the Activity Patterns of Schizophrenic Patients," Journal of Nervous and Mental Disease, 137, 258-67, 1963.
19. *ibid.*
20. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Part I)
21. *ibid.*
22. Alexander, F. and T.M. French, Psychoanalytic Therapy, New York: Ronald Press Co., 1947.

References

Chapter 5

1. Helfer, R.E. and C.H. Kempe, The Battered Child, Chicago: University of Chicago Press, 1968.
2. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Chapter 14).
3. Chapple, E.D. and L.R. Sayles, The Measure of Management, New York: Macmillan, 1961 (see particularly Chapters 6 and 7).
4. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Chapter 14).
5. Chapple, Eliot D. and G. Donald, "An Evaluation of Department Store Salespeople by the Interaction Chronograph," Journal of Marketing, 173-87, 1947.
6. Wallace, S.R., "Contribution to Business and Industry," Planning for progress: What advances in psychological knowledge could make the greatest practical contribution to the welfare of the nation in the next ten years, American Institute of Research, Pittsburgh, Pa., 1956.
7. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970.
8. ———, "Workshop for Youth: A Workshop Community Center for Unmotivated Adolescents," Research Utilization in Rehabilitation Facilities - Proceedings of an International Conference, Ralph Pacinelli, ed., 122-32, 1971.
9. ———, "Measuring Human Relations: An Introduction to the Study of the Interaction of Individuals," Genetic Psychology Monograph, 22, 3-147, 1940.
10. ———, "Toward a Mathematical Model of Interaction: Some Preliminary Considerations," in Explorations in Mathematical Anthropology, Paul Kay, ed., Cambridge: MIT Press, 1971.
11. Eiduson, B.T., "Retreat from Help," American Journal of Orthopsychiatry, 38(5): 910-21, 1968.
12. Black, B.J. and E.D. Chapple, "Rehabilitation Through Productive Participation - A Stance for Mental Health Services in the 1970's," Psychiatric Quarterly, 47(4): 1-12, 1973.

References
Chapter 6

1. Chapple, E.D., "Experimental Production of Transients in Human Interaction," Nature, 228(5272):630-33, 1970.
2. Technical Progress Report, HIP, (See Appendix I herein).
3. Chapple, E.D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Part I).
4. Technical Progress Report, HIP, (See Appendix I herein).
5. Wolpe, J., Psychotherapy by Reciprocal Inhibition, Stanford University Press, Stanford, 1958.
6. Holland, G.J. and B.F. Skinner, The Analysis of Behavior, New York: McGraw-Hill, 1961.
7. Schaefer, H.H. and L. Martin, Behavioral Therapy, New York: McGraw-Hill, 1969.
8. Skinner, B.F., Beyond Freedom and Dignity, Knopf, New York, 1971.
9. Patterson, C.H., "Behavior Modification in Rehabilitation: A Consideration of Its Values and Limitations," Rehab. Res. and Practice Review, 2(1):1-12, 1970.
10. Chapple, E.D. and E. Lindemann, "Clinical Implications of Measurements of Interaction Rates in Psychiatric Interviews," Applied Anthropology, 1(2):1-11, 1942.

References
Chapter 7

1. Chapple, Eliot D., "Measuring Human Relations: An Introduction to the Study of the Interaction of Individuals," Genetic Psychology Monograph, 22, 3-147, 1940.
2. ———, "Toward a Mathematical Model of Interaction: Some Preliminary Consideration," in Explorations in Mathematical Anthropology, Paul Kay, ed., Cambridge: MIT Press, 1971.
3. Chapple, E.D. and C.S. Coon, Principles of Anthropology, New York: Henry Holt, 1942.
4. Dobbs, W.H., "Methadone Treatment of Heroin Addicts," Journal of the American Medical Association, 218(10): 1536-541, 1971.
5. Chapple, E.D., "Position Analysis in Business Organizations," (monograph privately circulated).
6. Chapple, E.D. and L.R. Sayles, The Measurement of Management, New York: Macmillan, 1961.
7. Chapple, E.D. and C.S. Coon, Principles of Anthropology, New York: Henry Holt, 1942.
8. Whyte, W.F., Street Corner Society - The Social Structure of an Italian Slum, University of Chicago Press, 2nd Ed., 1955.
9. Chapple, E.D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Chapter 14).
10. ———, Rehabilitation: Dynamic of Change - An Anthropological View, Ithaca, New York: Center for Research in Education, Cornell University, 1970 (see particularly Chapter 4, "Work or Productive Participation," also published in Rehabilitation Record, 1972).

References
Chapter 8

1. Chapple, Eliot D. and A. H. Esser, "Workshops in State Hospitals," Psychiatric Quarterly Supplement, 38(2):317-22, 1964.
2. Chapple, E.D. and L.R.Sayles, The Measure of Management, New York: Macmillan, 1961 (see particularly Chapter 6).
3. Lubow, Bart K., et al, "Client Behavior in Sheltered Workshops: Two Case Studies," Cornell University, Rehabilitation Research Institute, Ithaca, New York, 1969.
4. Abruzzi, Adam, Work Measurement: New Principles and Procedures, New York: Columbia University Press, 1952.
5. Chapple, Eliot D., "A Manual for Job Position Analysis in Organizational Settings".
6. *ibid.*
7. 1969 Progress report to SRS, RD-2298-P-68.
8. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Part II).
9. ———, Rehabilitation: Dynamic of Change - An Anthronological View, Ithaca, New York: Center for Research in Education, Cornell University, 1970.
10. ———, "Does Rehabilitation Have a Future?" Dabelstein Memorial Lecture, National Rehabilitation Association, Chicago, 1971.
11. Berg, Ivar, Education and Jobs: The Great Training Robbery, Praeger Publishers, 1970.
12. Duke Power Decision, U.S. Supreme Court.

References
Chapter 9

1. Hayes, Donald P. and Judith Grether, "The School Year and Vacations: When Do Students Learn," (delivered at the Eastern Sociological Association Convention, New York City, 1969).
2. Atwood, Mark, "Values in Change in a Formal Organization," (presented at the American Anthropological Association meeting, 1967).
3. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970 (see particularly Chapter 14).
4. Flanders, Ned A., "Informing by so Doing," Contemporary Psychology, 16(3):144-45, 1971.
5. Burnett, Jacquetta H., "Event Analysis in the Microethnography of Urban Classrooms," (paper presented, American Anthropological Association, Seattle, Washington, 1968).
6. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970.

References
Chapter 10

1. Panzetta, Anthony F., Community Mental Health: Myth and Reality, Philadelphia: Lea and Febiger, 1971.
2. *ibid.*
3. Chapple, Eliot D., "Workshop for Youth: A Workshop Community Center for Unmotivated Adolescents," Research Utilization in Rehabilitation Facilities - Proceedings of an International Conference, Ralph Pacinelli, ed., 122-32, 1971.
4. Workshop Community Center for Unmotivated Adolescents, #15-P-55055, grant supported by Social and Rehabilitation Service, Washington, D.C.
5. Chapple, Eliot D., Rehabilitation: Dynamic of Change - An Anthropological View, Ithaca, New York: Center for Research in Education, Cornell University, 1970.
6. *ibid.*
7. Chapple, Eliot D., "Does Rehabilitation Have a Future?" Dabelstein Memorial Lecture, National Rehabilitation Assoc., Chicago, 1971.
8. Panzetta, Anthony F., Community Mental Health: Myth and Reality, Philadelphia: Lea and Febiger, 1971.
9. Hayes, Donald P. and Judith Grether, "The School Year and Vacations: When Do Students Learn," (delivered at the Eastern Sociological Association Convention, New York City, 1969).

References
Chapter 11

1. Chapple, Eliot D., "Cost-Effectiveness in Rehabilitation Facilities," in Research Utilization in Rehabilitation Facilities - Proceedings of an International Conference, Ralph N. Pacinelli, ed., 244-58, 1971.
2. _____, "A Practical Cost-Effectiveness Approach in Rehabilitation," (address given at symposium of Inter-Agency Council for the Handicapped of New Jersey, 1973).
3. Kubie, Lawrence S., "Pitfalls of Community Psychiatry," Archives of General Psychiatry, 18, 257-66, 1968.
4. Fischer, A. and M.R. Weinstein, "Mental Hospitals, Prestige and the Image of Enlightenment," Archives of General Psychiatry, 25, 41-48, 1971.
5. Chapple, Eliot D., Culture and Biological Man, New York: Holt, Rinehart and Winston, 1970.
6. _____, "Invasion of Privacy," unpublished monograph, 1964.

APPENDIX I

Computer Diagnosis and Evaluation in Programmed Interaction Therapy

In using interaction measurement techniques for diagnosis in the personality and character disorders (and other psychiatric states, for that matter), there is no attempt to extrapolate the results of so doing to officially accept Kraepelinian symptom classifications. Nor does their embodiment in various forms of mental status examination or case history taking, even when categorized for computer printout, make comparisons useful. Continuous interaction time measurements of the programmed diagnostic interviews (often referred to as the standardized, experimental stress interviews) are the data admitted to the diagnostic decision. The values of the interaction variables which together provide a description of the presenting personality, its idiosyncratic temperamental reactions and their severity are compared with normal levels. The design of the therapeutic program is then intended to focus specifically on these target reactions, to habituate the patient to increasing administration of stress in metered (and programmed) amounts and to reinforce his adjustment levels as these move towards normal ranges.

These interview designs and their reliability and validity have been discussed at length in many publications and in previous progress reports. It is perhaps worth emphasizing that the therapist is trained to follow the program, both in rigorously non-directive content and in accurate timing of his responses, so that he presents the "blank screen" that Freud originally believed should be the therapist's role; the extremely high reliability achieved indicates that the therapist's personality differences (and the counter-transference reactions) are reduced to a minimum. Thus the temperamental patterns (transference reactions) that the patient evidences in the diagnostic interviews and the deviations which these impose on the values of his basic personality variables (interactionally measured) make up the constellation of the behavior disorder. There are many such constellations in the personality and character disorder group, all quantitatively different. Each requires a carefully drawn prescription of particular patterns and sequences of programmed interaction therapy.

The data consist of duration and frequencies of actions and inactions (silences) making up each total response interval of the individual (i.e., verbal and non-verbal). Their combinations into patterns representing the relative order of individual sequences when two or more people interact -- latency of response, initiating, persisting against opposition, dominating and all the others -- have been described in detail elsewhere. They, therefore, are not dependent on scaling, with quantitative values assigned to steps on the scale; they are isomorphic with the arithmetical treatment of numbers since the instrument used for measurement is the clock. With

NOTE: The weighing procedures herein described have been substantially modified for functional analysis and also the program now selects from a variety of styles of therapy for the one appropriate.

such data. reliability of the observational-operational process is extremely high and the interchangeable units (of time) eliminate the uncertainties which the attributes of scales ordinarily introduce.

The reason for recurring to this aspect of interaction measurement, so often discussed in the past, is that the process of computer diagnosis, prescription and evaluation to be described is only in its beginning stages. Thus we work with accurate and reliable measurements but the simulation techniques used, based on making explicit the steps in the decision-making process gone through in the analysis of interview data, require us to assign weights to given magnitudes of deviation from normal ranges of the interaction variables. Obviously, this process can be considerably refined and even more sophisticated mathematical methods can be employed. But the efficiency of even this rudimentary simulation program is so high that it is worthwhile outlining it in considerable detail and then examining its practical implications.

The systems approach here used consists of three related computer programs. They are: 1) The Interviewer Variation Analysis program (IVA); 2) The Analysis of Initial Diagnostics program (AID); and 3) The Analysis of Therapy Sessions program (ATS).

Although the IVA program has been written for any therapy session design, for purposes of brevity, the discussion here is limited to IVA's application in diagnostic interviews. It has been demonstrated repeatedly that high reliability can only be obtained if the interviewer accurately follows the program outlined for each of the diagnostic sub-interviews. Apart from rigorous training in the technique (and in the non-directive verbal patterns permissible), the interviewer is aided to achieve accurate performance by the use of an ORL 347 Interaction Control System. This consists of a small computer which can be programmed for any interview design. After the appropriate settings on the control board are made, it operates a series of lights on a display screen located behind the subject in the interviewing room. These lights serve as cues to the interviewer telling him when to start a response, when to end it, how long to wait before responding, when to interrupt and for how long, etc.; it also counts the number of times particular programmed patterns have been and are to be used in given sections of the interviews.

The program he uses (and programmed in the ORL 347) is stored in our IBM 360-50 system. Since the interaction session of interviewer and patient is being observed and measured on magnetic tape by specially designed event recorders, the data stored on the tape can be run through the IBM 360 and the programmed pattern compared with what he actually did. The IVA program sets standard limits of permissible variation and classifies these as minor or major in terms of deviations in duration or in frequency; it also indicates a major deviation for some variables if too many minor ones occur.

The first step in the analysis of the diagnostic interviews is to make the IVA comparison. A summary flow diagram of the logic underlying

this program is presented in Exhibit 1. If any major deviations from limits are detected, the computer prints out an analysis of them and does not proceed unless additional diagnostics are administered or unless the supervisor decides that the deviations invalidate only one period of the interview and the others can be used. (This would be done very rarely.)

If no major deviations are detected, the computer proceeds to the AID program and compares the interaction values of the patient with the ranges of these values measured on several thousand normal subjects, largely from business and industry. Whenever a value falls outside the normal ranges, the computer assigns a weight to its occurrence whose magnitude is determined by the degree of the deviation from the normal range. A second incremental weight is given for the type of deviation which occurs. As the analysis continues, the weights are cumulated for the different reaction patterns tested for in the diagnostic interviews. From these totals, it makes a differential decision as to the type and severity of the patient's vulnerability to stress and the order in which therapeutic programs should be administered. The AID program develops an initial therapy program of 12 sessions to be administered to the patient. Final output from this program is in the form of a document specifying the exact nature of the maladjustments identified and the sequential order of the therapy programs to be followed. The program can be summarized as follows:

1. At what point was a basal level of activity reached? To determine this, we use in the preliminary formulation, the last 4 units of action in the first period of the interview or the last 5 minutes, whichever lasts longer. In the first revision this limit will not be used. The program calculates the mean and the mean deviation (not the standard deviation) progressively, that is, it starts with units 4 and 3 (if there were only 4), then adds 2, then adds 1, and calculates the coefficient of variation for each instance. The mean and the highest CV attained are stored for comparison with similar values later. If the value of the CV of the patients exceeds .50, this is outside normal limits. No base has been reached, a document is printed so stating, and the program stops. (Exhibit 2, p. 11)
2. If a base level exists, does the patient show high activity? If 4 or more units did not occur in the 45 minutes allotted to the first period of the interview, the program prints out a "high activity statement", and continues. (Exhibit 2, p. 11)
3. If the mean value of the base is less than 20 (i.e., in 100th of a minute this is equal to 12 seconds), the computer decides that an immediate therapeutic requirement prefacing all other treatment needs is a "sustained conversation program" by which the level of activity durations is to be increased, a program requiring 12 sessions. (Exhibit 2, p. 11)

4. If the base value of 20 or greater but less than 30, the low activity weighting counter which at the outset of the analysis was set at 0 is given an increment of 1. If the base is greater than 30, the program continues without alteration of the counter. (Exhibit 2, p. 11)
 5. The computer checks the durations of any latencies of response on the part of the patient (A-) to see whether any are greater than 15 (9 seconds). If so, the A- counter is advanced one count for each of the A- intervals exceeding 15. (Exhibit 2, p. 12)
 6. If none of the A-s exceed 15, the computer then tests to see whether there are any latencies of response which exceeded 6 (3.6 seconds) in more than 10% of the cases when B, the interviewer, had finished acting and A, the patient or subject, had a potential latency. If so, the low activity counter gets an increment of 1. (Exhibit 2, p. 12)
 7. If the low activity counter at this point equals 2 (i.e., with a latency of 6 and a base less than 30 but greater than 20), the computer prints out instructions for a "sustained conversation" therapy program, and stops further analysis. (Exhibit 2, p. 12)
 8. If the low activity counter is less than 2, the program continues. The computer now begins to check the occurrence of interruptions of the interviewer by the subject (A+) lasting longer than 3 (1.8 seconds). If these appear in more than 50% of the interviewer's responses, the A+ counter is increased by a factor of 2. (Exhibit 2, p. 12)
 9. If this is not the case, but A+ interruptions greater than 3 occur in more than 10% of B's actions, the A+ counter is increased by a factor of 1. (Exhibit 2, p. 12)
- * * *
10. The simulation program then begins an analysis of the next period (the second) when the diagnostic program calls for 12 successive non-responses by the interviewer after each instance when the subject stops. It has the additional requirement that if the subject doesn't initiate a new action before 15 seconds have elapsed, the interviewer is to initiate again. At this point, the coefficient of variation and mean subroutine is called. (Exhibit 2, pp. 13-14)
 11. The subroutine compares the CV for the base section of the first period with the CV for the second. It also compares the mean action for the second with the mean action of the base. If CV_2 exceeds the highest CV in the base by more than .10, the non-response program counter is increased by 1. If the mean action value for the second period is less than 1/2 or more than twice the base, the non-response counter gets an increment of 2. If the mean of the second period is not within 25% of the base, the non-response counter gets an advance of 1. The program then returns to the main routine. (Exhibit 2, p. 14)

12. The computer then asks the data whether every time the interviewer does not respond to the subject (B-), he was forced to wait the full 15 seconds and then initiate an action (a B alone). If the answer is yes, the non-response program counter (the B- counter) is given an increment of 4. (Exhibit 2, p. 13)
13. If the answer is no, then the question is asked, is every B- followed by an action of A, the patient (an A alone)? If yes, the non-response B- counter is increased by 2. (Exhibit 2, p. 13)
14. If no, is the mean B- (for the whole period) less than 6, i.e., than 3.6 seconds? If the answer is yes, the non-response program counter is advanced by 2. (Exhibit 2, p. 15)
15. If no, is the mean B- less than 15? A "yes" increases the non-response counter by 1. (Exhibit 2, p. 13)
16. The program then calls for the computer to perform the subroutine for A's adjustment, the degree to which he does not synchronize perfectly with the interviewer. Exhibit 2. This examines both his latencies of response and his interruptions, A- and A+ respectively. First, it considers the latencies, A-. Are there any greater than 15? If the answer is yes, the computer checks the low activity counter record for the base period. If a number greater than 0 is stored in it, the number of A-s greater than 15 which occurred in the first period is subtracted from the number greater than 15 in the second period and, if the difference is positive, this is stored in the non-response program counter.

If the low activity counter is equal to 0, the non-response program is increased by twice the number of occurrences of A-s greater than 15. If there are no A-s greater than 15 and the low activity counter equals 0, are there any A-s whose duration is greater than 6 to be found occurring following more than 10% of the interviewer's actions? If the answer is yes, the non-response counter gets an increment of 1. If the low activity counter is not equal to 0, no increment is given.

The computer then proceeds to the analysis of the interruptions by the subject (A) of the interviewer, the A+s. Is the A+ factor in the base equal to 2? If so, the computer is instructed to return to the main routine. If not, are A+s greater than 3 occurring in more than 50% of B's actions? If yes, increment the non-response program counter by 2 and return to the main routine. If not, does the A+ factor stored in its counter from period one equal 0? If not, return to the main routine. If yes, do A+s greater than 3 occur during more than 10% of the B acts? If yes, increment the non-response counter by 1 and return to the main routine. If no, return directly to the main routine. (Exhibit 2, p. 15)

- * * *
17. At the end of the period during which the stress of non-response is administered, a recovery period ensues during which the interviewer synchronizes his interaction pattern with the subject as he does in the first period (made up the initial adjustment state and the base). Both the CV and mean and the A-, A+ adjustment subroutines (Exhibit 2, pp. 14-15) are called and the same criteria used for comparison and for increments. However, all such values are doubled. Since the stress is no longer being administered, the intention is to emphasize by increasing the weight, the fact that there was a continuation of lack of adjustment when, in the normal, it would not occur. These doubled weights are stored in the non-response counter for the second period.
- * * *

A second type of stress, and separate interview, occurs with the administration by the interviewer of successive interruptions to determine the subject's relative dominance, his persistence or submissiveness and the like. After 3 seconds of action by the subject, the interviewer interrupts and continues for five seconds, and this occurs 12 times. To simplify the presentation, these are omitted from the exhibits.

18. We begin by calling for the CV and mean subroutine (Exhibit 2, p. 14) and then compare the computed values of those action intervals of A when he dominated, that is, where the chances of exceeding a duration of 13-14 are high. The question is then asked, are all the B+s, i.e., the interviewer's interruptions, followed by A alone, that is, did A outact, persist longer than the interviewer? If this is the case, the dominance program counter is increased by 4.
19. If no, are all the B+s followed by B alone, that is, did B dominate everytime he tried? If yes, increase the dominance program counter by 2.
20. If no, is the mean of the interviewer's interruption while A acted less than 3, that is, did the subject give up easily? If yes, is the mean less than 2? If no, add an increment to the dominance counter of 1. If yes, increase the program counter by 2.
21. If, on the other hand, the mean B+s are 3 or greater, call the A-A adjustment routine (Exhibit 2, p.15) and add the increments accordingly.
- * * *
22. As in the case of the stress of non-response, the period of stress during which the interviewer acts in opposition by trying to dominate and take over control is followed by a recovery period in which he

returns to programmed synchronization. Just as in that case, the two subroutines are called for and the dominance counter receives double weights for all instances of maladjustment of the assigned values following the schedule for the period of direct exposure to stress.

* * *

23. If the initial examination did not indicate the immediate necessity for a sustained conversation program to increase the activity level and reduce its associated causes e.g., hostility, extreme shyness etc., the results of these two programs can be evaluated by making a simple comparison of the total stored on the non-response program counter with that on the dominance program counter to determine which is greater.
24. If the non-response program is greater, the computer checks to see if the total is larger than 7, an empirically derived value which appears to provide a useful cutting score for decision-making on the basis of our preliminary trials. If it is not, no treatment program is recommended and simulation ends. If it is greater than 7, the computer prints out the initial non-response therapy program and stops.
25. The same procedure is followed if the dominance counter has the greater total.
26. If the totals in both counters are equal to or less than 7, no treatment is recommended, and the program ends. If both are greater than 7, both programs are printed out, thus ending the simulation.

Evaluation

Once the program appropriate for the individual has been selected, the simulation program, Analysis of Therapy Sessions (ATS) is used to evaluate progress. (Exhibit 3, pp. 16-17) This is done rather simply in its present form. The computer has stored the data analysis of the diagnostic interviews and the point results of the analysis. Each therapy session is analyzed by the ATS program to determine whether there has been an improvement from the previous one or, if not, from the diagnostics. If an adolescent shows no improvement since the preceding session, his interview is repeated. If he has already repeated this once, he returns to the last session with reduced durations and frequencies of the particular type of stress at which the program is aimed. The same procedure is also used in the case when his point score exceeds those manifested in the diagnostics. Summary flow diagrams of the whole logic of the ATS appears in Exhibit 3.

Discussion

As is evident in the flow diagrams and in the description of the simulation programs, the discriminations made as to interaction patterns with all their demonstrated variegation are very simple. The weights we have assigned for deviations may seem almost arbitrary, though they are based on years of experience in the analysis of the results of interaction therapy from which, empirically, we give greater weight to some kinds and magnitudes of deviations than to others.

What is important, however, is that the logics incorporated in the simulation programs and the flow diagrams which detail the computer operations are immediately able (and presently do) to call forth documents outlining specific treatment programs now in use. They can also be quickly and easily expanded since the fundamental logic underlying the decision-making process has been made explicit. To illustrate, we have previously reported on the differences in therapeutic programs necessary for adolescents, all of whom would have a high enough point total to require a special focus on non-response treatment plans. So far, we have lumped these together, that is, boys with 0 initiative and maximum latency would have an equal deviation score to boys who took the initiative in 100% of the trials and did so very quickly. We know, and have demonstrated, that in the latter group we have to employ a therapy program which emphasizes learning to wait before initiating, to slow down their trigger-happy initiating patterns. Conversely with the others who don't take the initiative, the program used gets them to learn to do so with reasonable frequency and without too long a delay. In addition, there is another group who over-react to the stress by continuing for long intervals, strongly accentuated by aggressive acts. A third documented treatment program which combines habituation to non-response and dominance is then called for.

During the year to come, therefore, we expect to expand the decision-making process which these programs are capable of simulating so that the full repertoire of diagnostic configurations and interaction therapy programs which we presently employ to bring about behavioral modifications will be available for the computer's call. In addition, far more testing of weights is necessary, facilitated of course by the analytical process we will be going through and a major expansion and refinement of the evaluation program will then become feasible.

On the practical side, it is worth reiterating what was given primary attention in the Summary Progress Report, namely that interaction measurement and programmed interaction diagnostics, prescription and therapy can be remarkably useful in expanding available manpower, at least in the area of the personality and character disorders. One would suspect that this will not ultimately be limited to children and adolescents. The systems analysis described herein makes possible effective control and supervision (and self-supervision, above all) since the print-out of measurements is

easily understandable and can be quickly related to what the therapist was instructed to do (or decided on his own).

Moreover, since this type of quantitative measurement can be easily learned, and its mastery during the training period objectively evaluated, those of us in mental hospitals can foresee its use in minimizing the unavailability of staff and upgrading our therapeutic performance by relying heavily on the "paraprofessionals." We can provide manifold opportunities to those who otherwise are barred from full participation in the helping professions by their lack of educational and professional qualifications. As these programs are developed and elaborated, sufficient data will be available for adequate evaluation of their effectiveness for adolescents at least. Since these kinds of procedures are easily expandable, the manuals, computer programs, systems analyses (and the demonstration of reliability and validity being continuously added to) make it possible to multiply them whenever the need exists, an important addition the immediate goal of improving the treatment and rehabilitation of acting-out adolescents at Rockland itself.

Exhibit I
INTERVIEWER VARIATION ANALYSIS

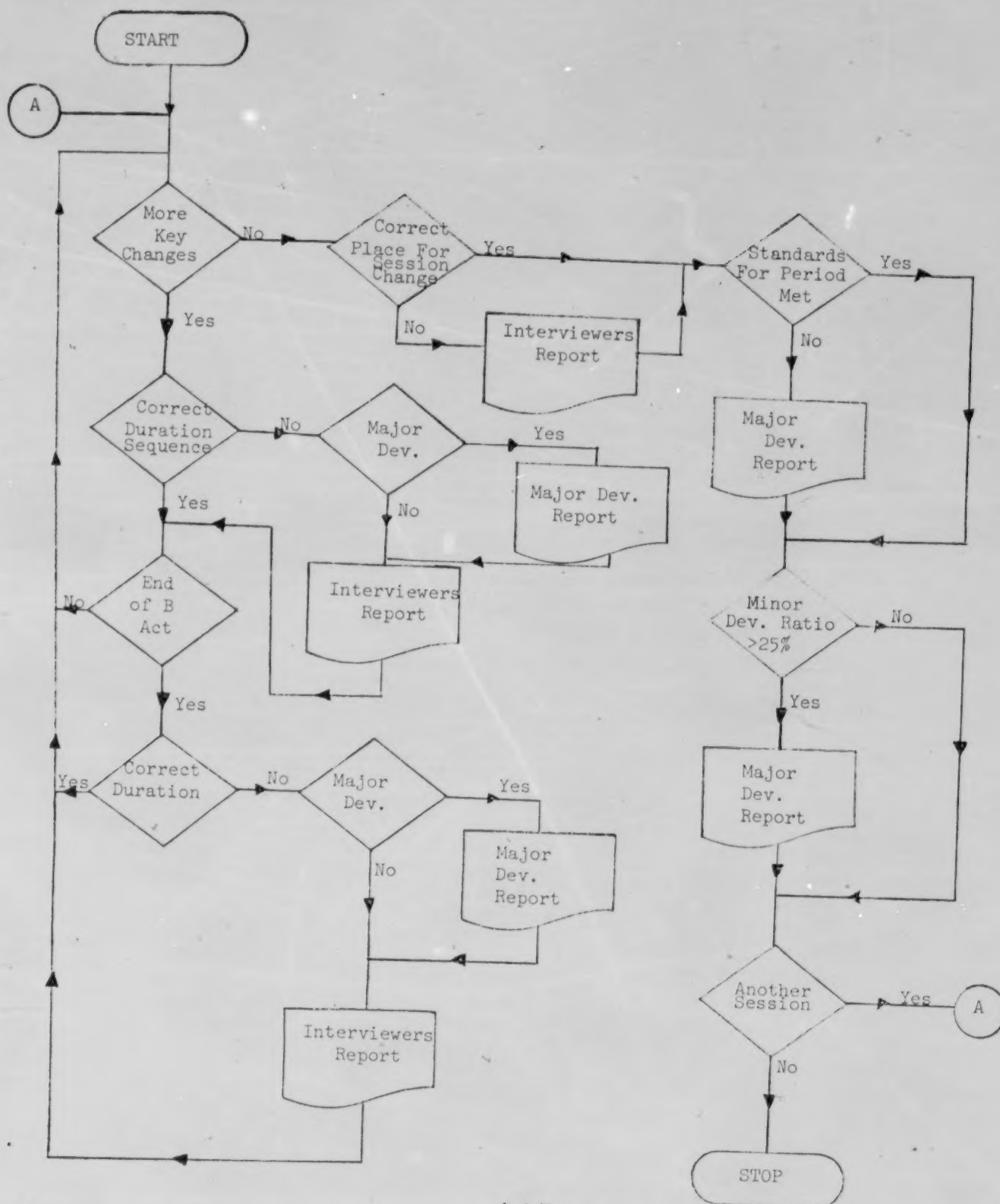
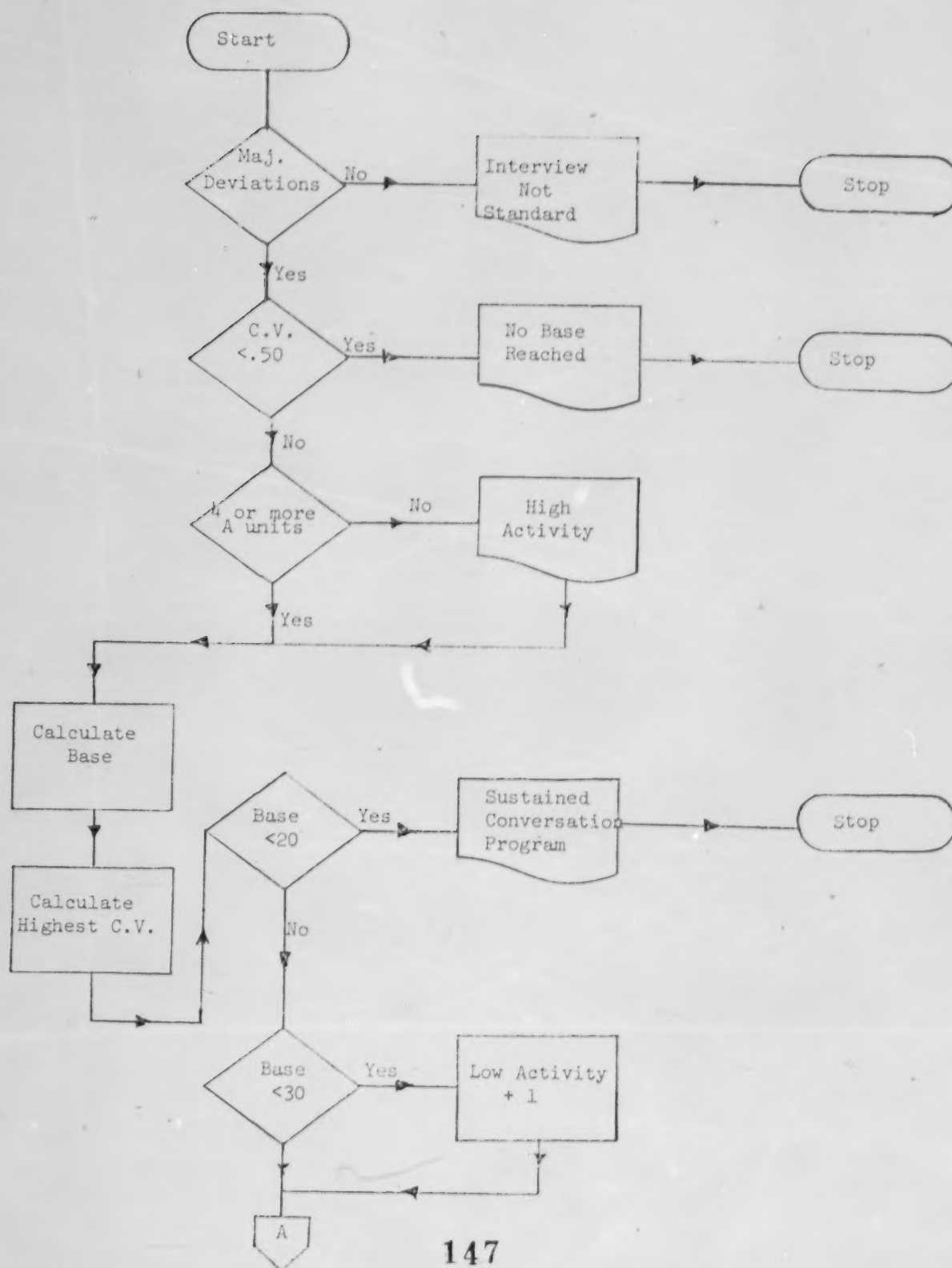
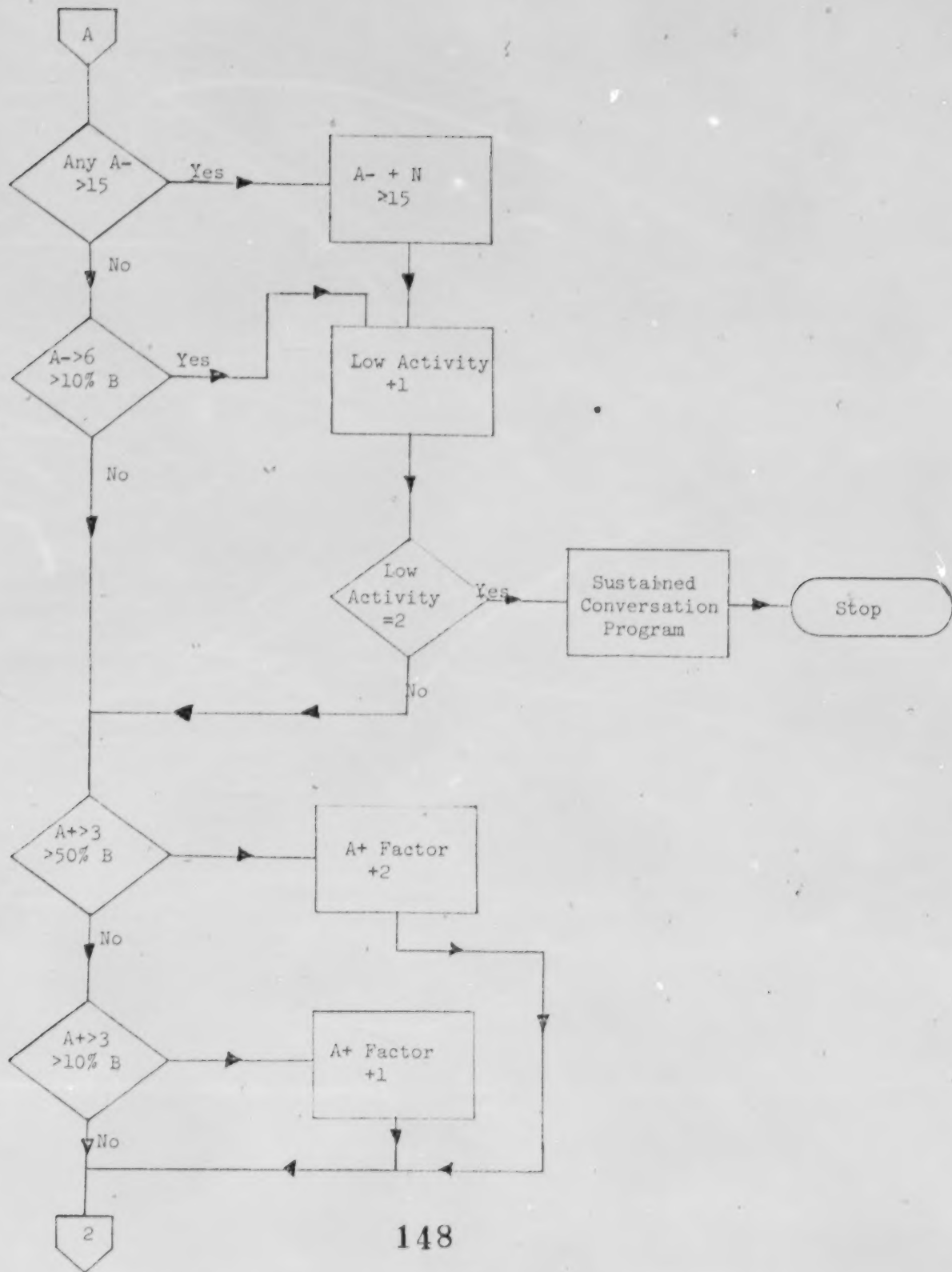


Exhibit 2
ANALYSIS OF INITIAL DIAGNOSTICS





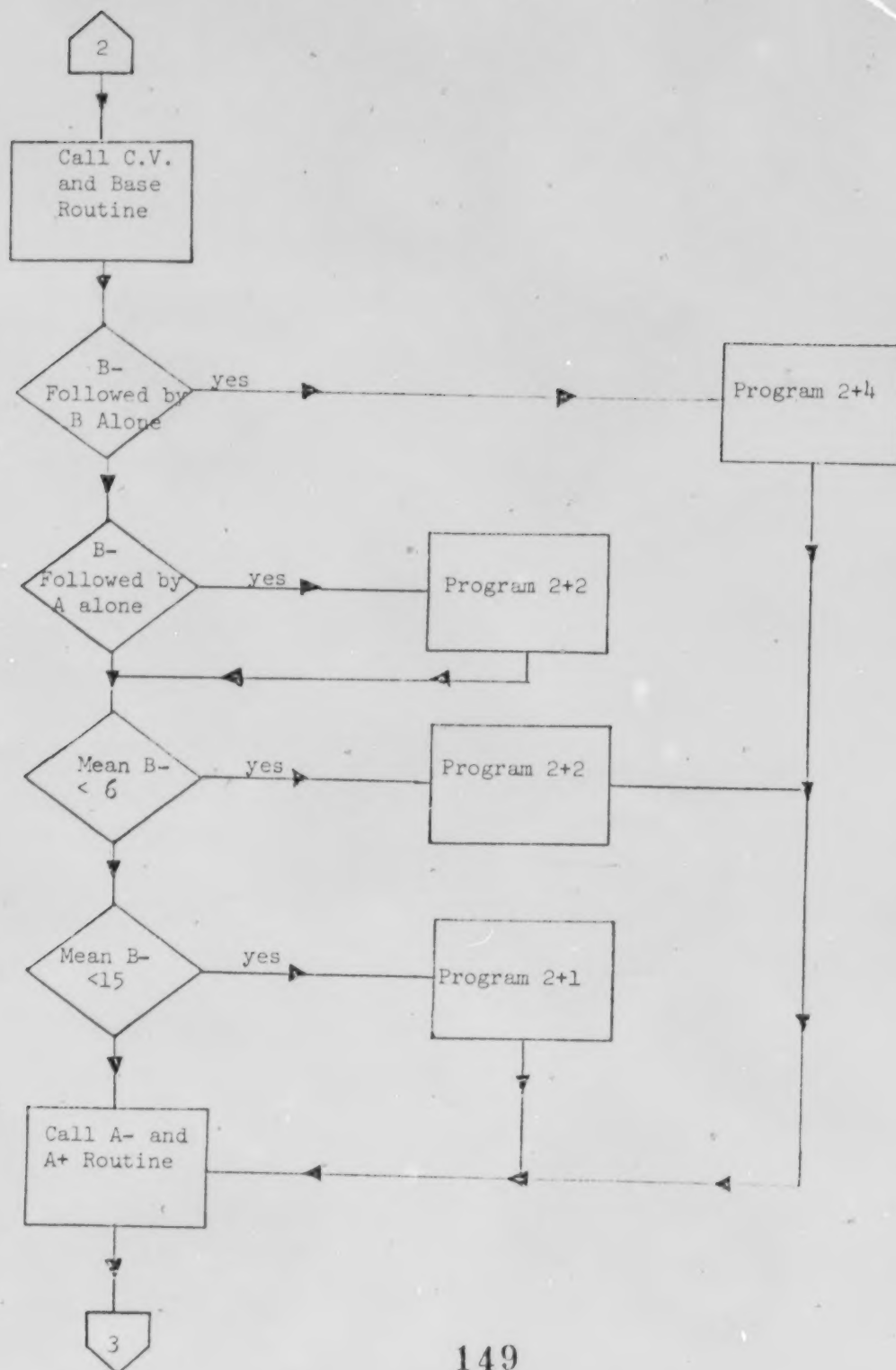


Exhibit 2 (cont'd.)
C.V. AND MEAN ROUTINE

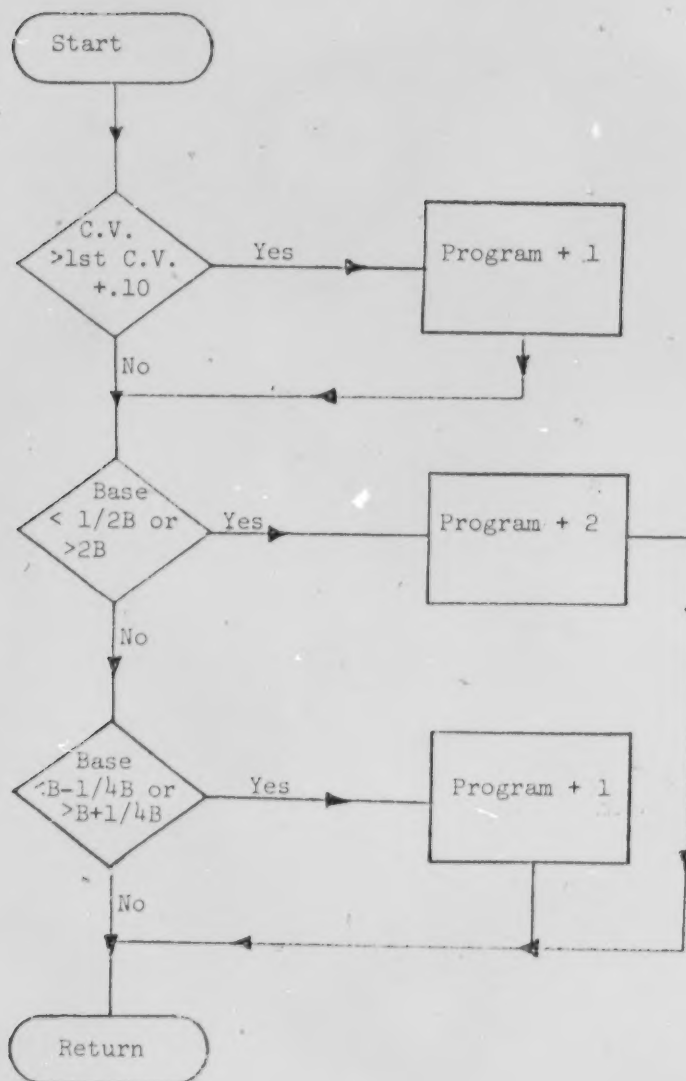


Exhibit 2 (cont'd.)
A- AND A+ ROUTINE

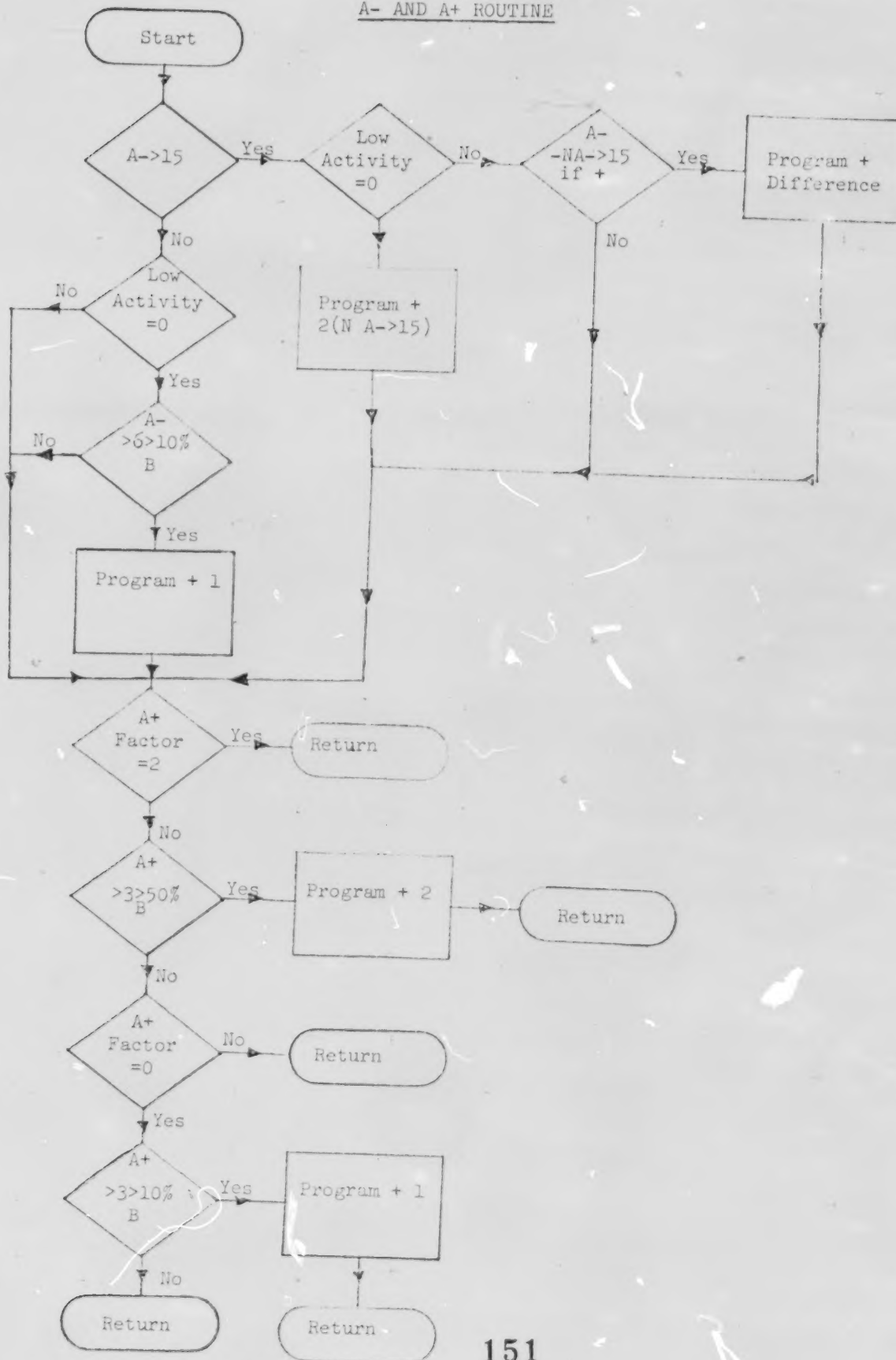
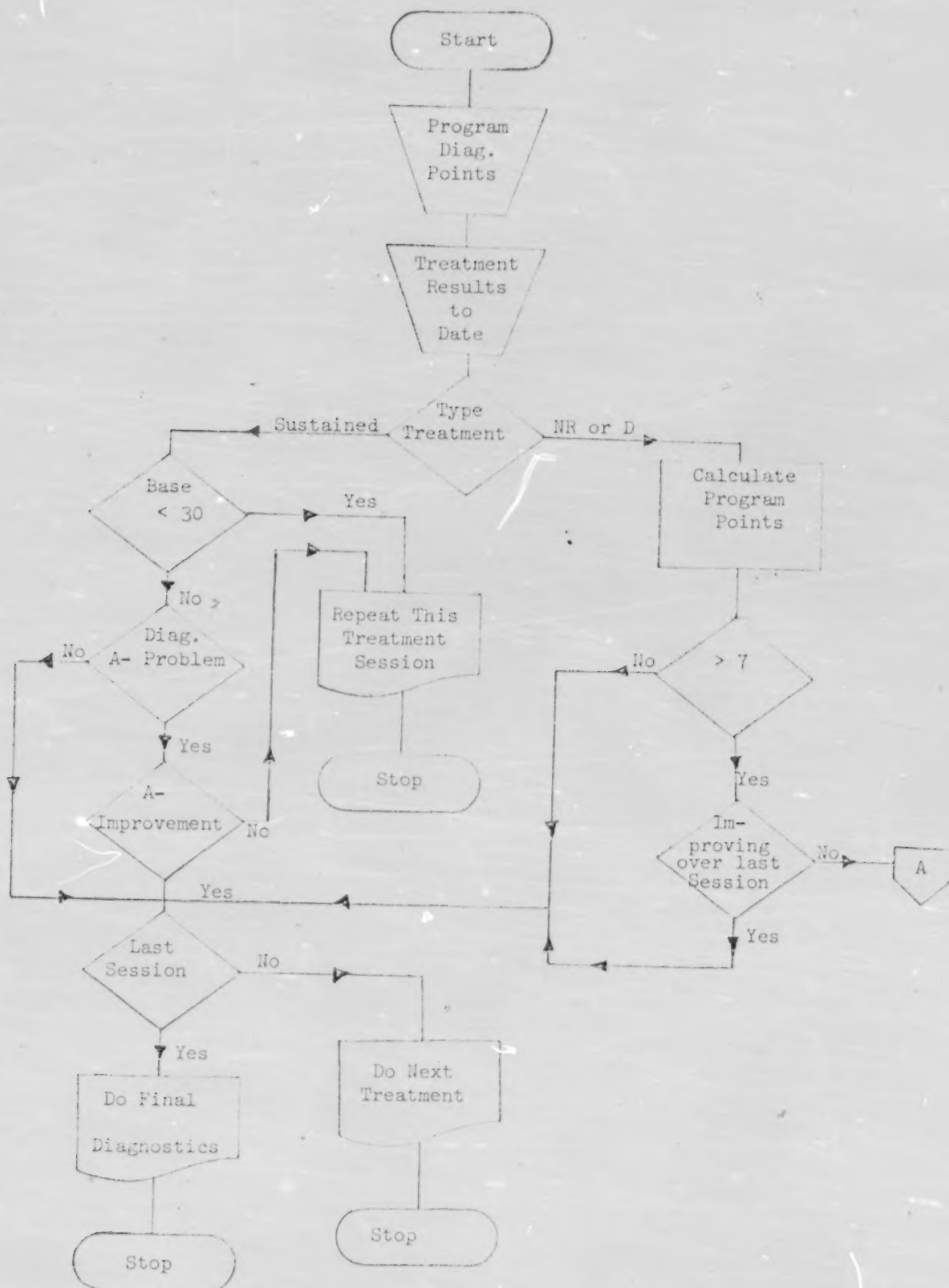
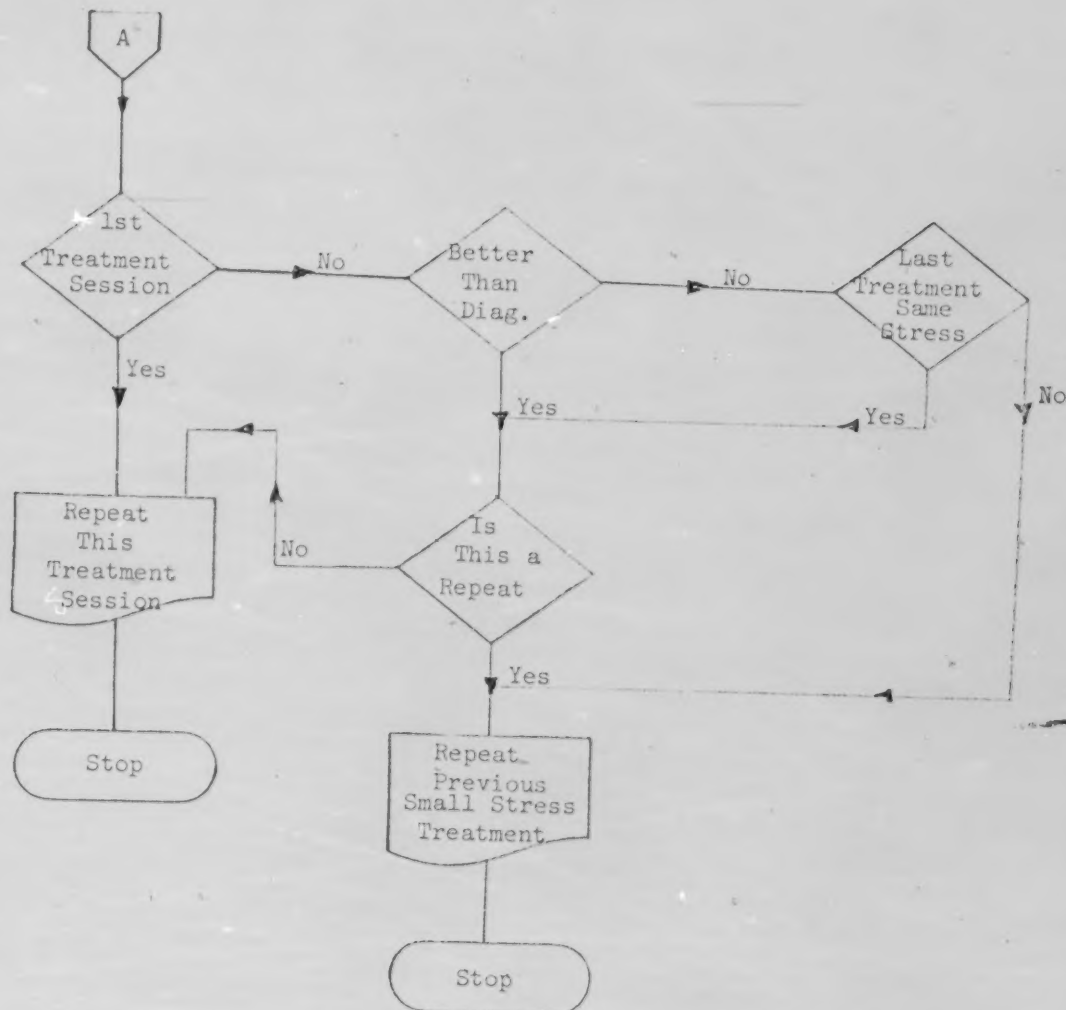


Exhibit 3
ANALYSIS OF TREATMENT SESSIONS





KEY TO SYMBOLS



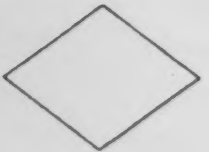
Processing - the point at which an action or set of actions occur.



Document - a written report.



Input/Output - data which is either input to a or output from a process.



Decision - the point at which a decision is made.
This point will have two or more paths leading from it corresponding to the possible answers.



Onpage Connector - an entry or exit point to or from a point with the same label on the same page.



Offpage Connector - an entry or exit point to or from a point with the same label on another page.

APPENDIX II

A MANUAL FOR OBSERVERS AND INTERVIEWERS
IN INTERACTION MEASUREMENT RESEARCH

Introduction

Today, the word interaction has taken on a host of meanings, often being regarded as limited to the communication process, to the formal logical properties of language in all of its complexities. In the terms with which interaction measurement is concerned, interaction means the observation and measurement of the durations of patterns of response and non-response. The criteria on which such measurements are made are limited to the contraction and relaxation of the muscle systems used in response patterns by the particular individual; they are, therefore, equally applicable to the lower animals, vertebrates and invertebrates alike, as well as to humans.

In addition, as will be evident in what follows, we are concerned with the total response pattern, not simply the presence or absence of sound. The reasons for this definition of the phenomena we are studying are simply that there are marked cultural, subcultural and species differences in the relative use of verbal and non-verbal response. Even more important, within any cultural setting, individuals themselves differ remarkably in the degree to which they head-nod, smile or gesture as well as speak. Since we are primarily concerned with understanding the personalities and temperaments of the individuals we observe, whose interactions we measure, we are trying to reduce cultural differences to a minimum. We are describing the fundamental or invariant aspects of the individual's interaction pattern, and the course of research over many years has shown that this, in fact, can actually be done.

For further understanding of the theory of interaction measurement, one would have to turn elsewhere than to this manual. At the moment, it can be stated that learning to interview by this method will prove remarkably rewarding in beginning to understand basic characteristics of individuals' personalities. Further, the ways in which they react to stress, i.e., their temperamental reactions, are also being measured. For those interested in other definitions, these are called, in psychoanalytic theory, the transference reactions. It is not important to agree as to the exact similarities. The only point of making such a comparison across theory is to suggest that, whatever one's basic background and training, a great deal of the descriptive findings about human beings and their reactions to others will be found to be translatable into the behaviors which the interaction method can measure. These are elicited by deliberate programming of an experimenter-interviewer in specific techniques of interacting with others.

Although the word "stress" is used in connection with this interview and, in fact, we are deliberately introducing interpersonal stress, the amount used by the interviewer is held to threshold limits. In other words, in thinking of this interview, one can say that it is very similar to the allergy test used in medicine. The physician scratches the patient's skin and administers only enough

of the allergen to get a small reaction. The stresses in this interview are no greater than that; they are far less than those which the individual encounters in everyday life.

Although interviewing is by far the most common method of trying to evaluate another person and, for most people, the most rewarding in what one can learn through it, it is also notoriously unreliable when interviewers are compared with one another. The development of the standardized interaction-type interview was a consequence of the discovery that skilled psychiatrists, using standardized topics with normal subjects, obtained very different results when each interviewed the same individual. These interviews were measured by an observer, using interaction criteria, and both the interaction measurements for given individuals and the content -- what they talked about and how much -- varied remarkably depending on who did the interviewing. As others have shown since, what we obtained was a stable statistical description of each interviewer's idiosyncratic characteristics, but one would have been hard put to believe that each interviewed the same person.

As a consequence, a series of experiments were conducted on interviewing, both with these psychiatrists and, since then, with many others, professional and otherwise, in which we began to follow the road towards high reliability by controlling the timing of the interaction patterns used by the interviewer, and by controlling what he said. Our first step was to try the effects of standardized periods of interaction in which the interviewer did not adjust -- all the while following "non-directive" rules for his verbal content. We did this because we believed that no matter how well one adjusted to the person being interviewed, unless we could evaluate how he behaved in situations where the typical adjustment of psychotherapeutic-type interviewing was not followed, we would learn little about his capacity to adapt to different kinds of people in different situations.

As we came to concentrate on the effects of the most important types of interactional stress in individual encounters in everyday life -- how he deals with new situations, how he handles aggressive or dominant behavior, what happens when he doesn't obtain the "appropriate", or "supportive" response, in fact, when he doesn't find the other person responding to him -- we found that programming the timing of the interviewer's interactional behavior gave us highly reliable results. It was only in those situations where we did not program -- where we took supposedly sophisticated non-directive interviewers and let them follow the rules as they understood them -- that we still had very poor reliability. In consequence, after many years of experimental work, which also included studies on the ways in which content -- the words and phrases used -- affected interaction, we finally arrived at the basic definitions of interviewing method which are often referred to as the interaction chronograph technique.

In brief, what is being done here is to use the interviewer as the experimental variable and to measure how all these individuals compare with one another against the standardized amounts of particular interaction patterns he administers. Hence each interview is, in fact, an experiment and, if properly conducted, following the rules given here, you will be able to obtain highly reliable results. This means that by reinterviewing the individual, whether the same or a different interviewer does so and whether this occurs on the same day or weeks or months later, the values will correlate very closely with each other. Studies of this sort have been carried out in great detail by Matarazzo, Saslow, et al., and reported in many papers.

Although it may seem a difficult task to train an individual to interview using the highly specialized method described in this manual, from experience we have learned that there is no reason that someone who has never interviewed before cannot become competent in a short time. With the help of a trainer and this manual, an interviewer should be performing adequately within four weeks after beginning his training period. Real sophistication and skill will develop more slowly with practice.

The Interviewer as Observer

The interviewer's job is to measure the interviewee's durations of actions and inactions (silences) as they occur in the interview; however, to do this accurately the interviewer must first become a skilled observer. He must be able to recognize, almost instantaneously, whether or not A is acting.

Here the interviewer's decisions are based upon the occurrence of visible changes in the subject's skeletal muscles, either in the contraction or relaxation of the muscles around the face and eyes, or the nodding or shaking of the head. When a person starts to act and the muscles contract, this is the beginning of action. The end of action is marked when they relax, or reach a state of rest. In head nods, therefore, one records from the beginning of the first nod until the nodding sequence ends. One does not record each nod individually since the contraction and relaxation of the muscle systems is still continuing, even though speech may momentarily be ended. Some people begin a response by nodding their heads or smiling; only after a brief period of non-verbal action do they actually begin to speak. Many people very characteristically stop or pause in the middle of what they are saying. By observation of the muscles around the mouth, it is quite clear whether or not a pause has actually occurred or whether they are still responding. Consequently, in determining the sequence of periods of response and non-response on the part of the individual one is observing, the cues for making the discriminations are the beginnings and endings of actions involving contractions and relaxations of muscle systems from visible or audible cues.

In watching individuals, particularly for the first time, one often has difficulty with those who do not appear to have clearly defined beginnings and endings of either facial or gestural expression. This is particularly true of persons who frequently use a half-smile as a fixed expression. When such an individual smiles, his face contracts, and when the muscles begin to relax, rather than going to a complete relaxation state with a closing of the mouth, the mouth remains open and the half-smile is clearly visible even though the motion of the facial muscles has ended. The movement from a smile to a half-smile involves the full normal excursion of the relaxation process for that individual, and the moment that relaxation appears, the end of the response should be recorded. The same thing is true for people who habitually keep their mouths open. After two or three actions on their part, one can determine criteria which define the beginnings and endings of their responses.

Although the occurrence of response is usually easy to detect, it is more difficult to decide whether, when a silence occurs while a person has been talking, this should be regarded as the ending of

the response. One cannot make a decision on the basis of the grammatical structure of what the person is saying. In other words, if the person appears to be in the middle of a sentence and stops speaking, and his facial muscles relax (particularly those around the mouth), that is the end of an action and should be so recorded. On the other hand, if the individual pauses in his speech but is still smiling or obviously taking a breath or moving his mouth as if words are temporarily blocked -- if facial contractions continue -- he is still acting. It is important not to try to outguess the subject by saying to oneself, "I think he is going to stop". The interviewer must train himself to wait for the relaxation actually to occur.

Since we are concerned only with the total response pattern of the individual, that which is interpreted as interaction in the particular society in which we are working, there are some actions we do not record, however much a skilled observer might regard them as incipient actions. These would include random movements of the trunk, changing body-orientations toward or away from the other person, tapping the foot or hand, and any other postural changes which are commonly not part of the interaction pattern of the group one is studying. This also applies to involuntary muscular action, such as twitching of the eye or cheek muscles (known medically as "tics"). Such twitching or involuntary winking occurs regularly and repeatedly without any apparent correlation with the interaction pattern and should, therefore, be omitted from consideration. We have to avoid hypotheses that some actions other than those commonly included in speech, facial expression, head nods and gestures might have some significance which is special to that person alone. The test is whether an ordinary person, not a specialist, would say that the individual had responded, not whether there might be some hypothetical relation between a special type of activity and a theoretical type of response.

Non-Directive Interviewing

The mechanics involved in conducting an interview are easy to learn and are detailed in later sections of the manual. The following brief description is included here so that the reader will be able to visualize more accurately the application of the non-directive interviewing technique.

The interviewer faces a button box on which there are three buttons. One of them (B) is assigned to the interviewer, a second (A) is assigned to the interviewee, and the third (S) is used to indicate the beginning or end of the interview or any of the five periods within it.

When A acts, B pushes down his button and holds it until A's action has ended; at which point, he lets it up. While A's button is down, a tone is placed on a magnetic tape which is moving at a uniform speed. The distance travelled when the key is down consequently measures the length of A's action. When A is inactive, the length of time during which there is no A tone being recorded, is the measure of the duration of A's inactivity. The same applies to B's button. When A and B act together or are silent and both buttons are depressed or not depressed, these intervals are recorded and measured in the same way.

Each time that the interviewer speaks, the length of his response is fixed. In many interview designs this lasts for five seconds, and is always non-directive. It is important, even for those familiar with this technique, to understand thoroughly the special way in which the term non-directive is used in describing this interview. The limitations required in this type of non-directive technique may appear to be unusually restrictive. As explained in the introduction, the reason for this restriction is to insure the standardization of results and, consequently, it is important to follow the limitations emphasized here.

The purpose of the interview is to get the interviewee to talk about things and situations in which he is interested and can talk about easily.

It is important for the interviewer never to block or change A's train of thought in any way because this may affect the length of his response. In order to keep the interview going without disturbing A's train of associations, when A finishes a response, B repeats some part of the last phrase to make sure that he keeps on with the same thought as A, and follows with a response indicating his desire to hear more. As mentioned, the total length of B's response is programmed and usually five seconds.

The key to effective interviewing is to get the person to become more and more explicit about the concrete incidents and situations on which his attitudes are based.

In conducting this exploration of an individual's interests, the interviewer needs to remember that most conversation is characterized by general statements which, if taken at face value and regarded as the end of what the subject wants to say, will make it difficult for the interviewer to come up with an appropriate response. The importance of the use of phrases such as: "Tell me more about it", "How did it happen?", etc., is that they shift the individual from expressing a general attitude or opinion to talking about the particular events or situations with which it is associated.

The interviewer's aim is to get A to talk about things that have happened to him, everyday events which can usually be discussed much more easily than emotions or feelings.

In getting the interviewee to be explicit about the things that he does or that have happened to him, the interviewer tries to keep the conversation on topics like A's relations with other people, what he does with others, the experiences that have meant a great deal to him -- any topic that has a strong personal reference. This process will become more natural as B learns to vary his responses. New interviewers habitually use 3 or 4 of the same phrases to begin a response and, in the interruption period especially, this tendency may become obvious and even irritating to the interviewee. Perhaps it is in this area that a trainer can be of the most help -- suggesting appropriate and varied responses to A's content.

Before the Interview Begins

Before the interviewer begins recording A's actions, it is necessary for him to find a broad general topic that the interviewee has some reason to talk about. The topic should deal with what has happened to the person, and it should be something which potentially has several different aspects or categories which can be explored, so that if the person talks for very brief intervals he won't run out of material. For employment interviews, the general topic is usually A's background which, of course, includes work experience, schooling and, possibly, spare time interests. For patients, the most useful general topic is what they have been doing recently, since the interviewer doesn't know if the patient wants to talk about his pre-illness experiences, and of course the main point is to find a topic which the person will be really willing to talk about. The topic should be one where A has had some actual experience rather than one where all he can do is respond with opinions or feelings.

Ordinarily, the experiences that are meaningful to a person involve his relationships to people, so the topic should be selected from the major areas of his interaction with other people.

It has been also found that the starting topic should not be too general, for instance, "Tell me something about your background", is too vague. "Tell me something about the jobs you have had", is still too vague, because then A doesn't know which job to pick if the field is quite wide.

Preliminary remarks to a job applicant might go something like this:

"This interview is part of our regular employment procedure, and a chance for us to get to know a bit more about you. We can talk about the jobs you've had, things you are interested in, your schooling, travel experiences, etc., and if you have any questions, I'll be glad to answer them when the interview is over." At this point in the introductory remarks A will usually indicate an interest in pursuing one of the topics B has suggested. B then begins to button while giving his first response. Depending, of course, upon what A has indicated as his preference, B might choose one of the following responses with which to begin the actual interview:

"To begin with, then, I wonder if you would tell me something about your present (last) job and what it is (was) like?"

"I'd be interested in hearing something about your schooling or training and what that was like."

"I wonder if you would tell me about some of the things that you have been doing recently on the ward."

The questions in this section are designed to encourage a subject to become more concrete rather than to summarize a situation with a general statement.

Once A has started to reply to a general question, the interviewer must be prepared to keep the conversation going by non-directive means as soon as A stops talking, whenever this may occur. There are really only two things that make up each B response.

1. A's last phrase is repeated to make sure that the interviewer doesn't change his train of thought.
2. B combines A's phrase with an appropriate question to indicate interest and to ask to hear more.

In order to indicate interest, many of the responses of the interviewer can include the phrase "That's interesting," after

repeating what the interviewee has just said.

By picking up and repeating the essential part of the last phrase that the person has used, the interviewer makes sure that he keeps on exactly the same thought of the interviewee. Moreover, no matter what A ends up with, the interviewer has something to start to talk about.

The secret of good non-directive interviewing lies in being interested in what the person is saying at the present moment, and asking him to tell you more about it. A is interested in everything that B says and, by listening carefully, responds to the last statement that he makes. Of course, B's choice of the follow-up question depends on what the interviewee has just finished saying. The suggestions listed below have been grouped according to the level of generality at which A is speaking. Some questions are used to get the topic going, some to get the person from the general to the specific, and some to keep him talking when he seems finished with his subject.

General Questions:

When A ends a response on a subject about which he has not been explicit -- that is, when he has not given any indication of what it was like for him, or what he did under the circumstances, or has not described anything that happened to him, one of the following questions can be used to get the topic going along more specific lines.

Tell me something about what it was like for you there.

I'd like to hear something (more) about what you did when you were there.

I'd be interested in knowing a little bit (more) about (that).

Tell me something about your interest in (that).

What are some of the things which happened when you were there?

Can you give me some examples of the kinds of things that happened (that you came up against, that you had to handle, that you had to do in this connection, etc.).

I'd like to hear more about these things (that time, this place, etc.).

Will you explain in a little more detail what you mean by that.

Could you expand a little on (that) for me.

I'd like to hear what was involved in (this) as far as you were concerned.

What did you do in this situation (when this happened, when you were there, under these circumstances, etc.).

Please go on in a little more detail about (that).

When the person has been specific and the topic seems finished.

And then what did you do?

And then what happened after that?

What else did you do?

Tell me about other parts of your job (other things that happened when you were there, other places you have visited, other things you are interested in, other things you did when you were in school, etc.).

You've mentioned several (things that happened, parts of your job, places you've been, things you like to do, etc.) and I'd like to hear more about one of them.

The above questions are used to keep the conversation going, but they should not be asked until the person has been fully drawn out on the present topic. For instance, if A says, "I worked as an assistant to the manager," B's response is not, "You worked as an assistant to the manager, that's interesting, and then what did you do?" This will have the interviewee hopping from subject to subject and soon there will be nothing more to talk about. Many times an interviewer feels he might as well ask, "What else did you do?" or, "And then what happened?" simply because he does not seem to be getting much of an indication of interest from the interviewee at that particular point. However, by trying constantly to make A become more explicit, the danger of running out of something to talk about is minimized, and the interviewer is frequently pleasantly surprised to find that the interviewee has something to say about the topic after all.

Questions to get the person back to the subject of himself.

Whenever the person seems to be getting technical, or delivering a lecture or describing something which has very little to do with himself, the interviewer should try to get him back to the subject of himself, with one of the following:

How does this affect you (your job, what you have to do)?

What parts of all this involved you and what do you have to do about it?

What do you have to do about all (this)?

If the person seems to have very little to say.

Well, I'd like to hear about a typical day.

Please tell me in general about the way things go on a typical day.

Well, since I don't know what it's like, I wonder if you would describe what you have to do during the day. (or what you did when there).

It may seem to you that that's about all there is to it, but I'd like to hear about it in a bit more detail.

Responses to Avoid

Do not sum up or generalize about what the person has said.

Your conclusions may not be exactly what A had in mind, and by introducing your own conclusions or generalizations about what has been said, you may be introducing a new thought, or blocking the interviewee's train of thought.

Do not introduce similar but different words in repeating A's last phrase.

In introducing a new word, you may choose one which means the same thing to you, but has a different meaning for A, and therefore you may be introducing a new thought to him.

Do not restate what the person has said and then add your own thought.

If the interviewer is not alert to keep from influencing the interviewee's train of thought, a problem may arise. For example, after the interviewee has stated: "I have written stories about sea adventures . . . and cowboys, too", the interviewer should not reply with, "Stories about sea adventures and cowboys are related, aren't they, both full of adventure?" A may not necessarily have put them together in his own mind, and this suggestion of an idea by the interviewer may upset his train of thought. It would be better to say: "How does it happen that you are interested in writing about sea adventures and cowboys?"

Do not indicate that you have an opinion or attitude of your own.

If the interviewer gives an indication of holding an attitude or opinion, the interviewee may react by being unwilling to talk, or may try to act as he thinks the interviewer wishes him to. It is not even safe to say, "That's nice" or "That's too bad," in a sympathetic tone of voice. This is potentially dangerous because this is the interviewer's opinion of the situation, and the interviewee may think quite differently about it and say, "Well, no, not really".

Most people who are at all familiar with the training of interviewers are aware that if the interviewee says, "I was in New York last year", and the interviewer immediately responds with "I love being in New York, don't you?" the chances are roughly 50-50 that the interviewee really dislikes New York but will hesitate to say so. A few instances of this sort in an interview will

convince A that he is dealing with a person whose opinions and judgement are very different from his own, and this may affect his pattern.

Do not repeat something that the interviewee has said previous to his last phrase.

No question or comment should be made that is not in the context of the immediately preceding remarks of the interviewee. Except in special situations, even topics mentioned somewhat earlier in the interview, or sometimes even in the same action response (unit), should not be touched upon if it is clear from following the context of A's remarks that his train of thought has moved to another area. Many people have a tendency to move from one subject to the next and forget how they got there: to bring them up short by asking them to go back will stop them in their tracks, at a loss as to what to say next.

Avoiding short A responses (head nods, etc.) in the middle of B's 5-second response.

It is desirable to avoid getting very short A actions, since these may not be really representative of A's normal pattern when they are caused by the phrasing of B's response. For instance, if the interviewer starts his response with, "You did so-and-so, that's interesting", the interviewee almost invariably puts in a quick "Yes" or "uh-huh" before the interviewer's follow-up question. Or if the interviewer says, "That's the way it was, then", the same short head nod or "Yes" is apt to occur. In addition to avoiding this type of phrasing, the interviewer can make sure that there are no breaks in phrasing. For instance, he can start his response with:

Oh, I see, please tell me more about ...

I understand, and I'd like to hear more about ...

You've mentioned (these various things) and I'd like to hear ...

I'd be interested in hearing more about ...

Please go on ...

Tell me a little bit more about ...

That's interesting. Please go on ...

Perhaps you could tell me (go on) in a bit more detail ...

I see. That's interesting ...

That's the kind of thing I'm interested in ...

It's just that I'd like to hear ...

Do not ask technical how-to-do-it questions.

There are many subjects, such as details of a job, which can result in complicated explanations. The interviewee may describe politely how he fixed his car, or how to write a department store sales check, or how to make a chocolate cake, because the interviewer has questioned him on it, yet his lack of expression indicates that he is not particularly interested.

Technical questions are often a convenient crutch for the poor interviewer who finds it difficult to get the person talking easily. But such questions, by their very nature, require specific amounts of activity to cover the details, and can significantly change the results of the interview. Just as one would not expect an hour's lecture by a professor to give as accurate a picture of his personality as one would obtain by talking with him over a cup of coffee, so, in the interview itself, the interviewer does not want to request the interviewee for what is, in fact, the equivalent of a lecture.

This does not mean that the interviewee should be cut off if he insists on describing some technical process about which he has attitudes or feelings. On the contrary, the interviewer must remember to behave as interestedly with regard to something he may not understand as if the person was talking about his love life.

Do not ask about a particular aspect of a subject that you may be interested in.

If an interviewee has touched upon a subject, but has not fully covered it before going on to something else, the interviewer cannot go back and pick out the things he wants to hear about; he must give the interviewee the choice of the subject. Thus, when A finishes by saying, "and that's how I came to be interested in photography", the interviewer (if photography has been pretty well covered) can then only ask a general question about the topic being discussed in that period, such as, "What other things do you like to do in your spare time?" He cannot say, "You mentioned previously that you liked to work in your garden, can you tell me something about that?"

Do not ask about something which is logically connected to the subject in your own mind.

This may not be one of the interviewee's interests. If the interviewee mentions that he has been to New York, for instance, or even if he has just finished telling quite a bit about what he did while he was in New York, the interviewer should not try to indicate his own interest and familiarity with New York by asking what he thought of Grant's Tomb. Grant's Tomb has not been mentioned, and it may well be that the interviewee has never heard of Grant's Tomb, or didn't react to it one way or another and, in any case, is disturbed in his train of thought by the introduction of the subject.

Do not ask direct questions.

This interview is not concerned with content and data about the interviewee (where he lives, for example, is not important). The worst difficulty with such questions is that they can be answered with only a few words, and then the interviewer is faced with having to ask another question almost immediately. For instance, if the interviewer asks, "Where did you go to school?" or "What other places have you lived in?" or "What other jobs have you had?" all these things may be answered very briefly. If, instead, the interviewer says, "Tell me something about your schooling" or, "your other jobs and what they were like", the interviewee is encouraged to continue with the subject.

If the interviewee says, "Well, I like to listen to music", the interviewer should follow up with, "tell me something about the kinds of music you enjoy", or, "something about your interest in this line" or, "something about some of the things you have done in this connection", and not "Tell me about some of the music you are interested in."

Wording which can cause problems.

In general, the simplest words are the best ones. "Tell me something about what you did" is much safer than "I'd like to hear about some of your experiences when ...", since "experiences" may have the connotation of something special having happened, and some people are at a loss for something out of the ordinary to tell about. Similarly, "Tell me something about your schooling" is preferable to the word "education", since to some people "education" may mean college, and they may never have been to college.

The words "more", "other" and "anything else" have to be used

with care since if the interviewer says, "I'd like to hear more about your job", meaning the part of the job the person is talking about, it may be interpreted as wanting to hear about other aspects of the job, and the interviewee will have covered many parts of a subject without ever becoming concrete. If "more" is used, it should be combined with "more about this part of your job", so that the interviewee understands that the interviewer wants more about this particular aspect of a topic. The same care in phrasing has to be used when saying "other" and "anything else". Generally B should not use words which are ambivalent, qualifying words, or words which denote value judgements. B should not place any undue emphasis on any words or phrases.

Special Situations

When the interviewee asks a direct question of the interviewer.

The interviewee may reverse the roles by asking the interviewer a direct question such as "Have you ever been there?", or he might ask B's opinion about the topic under discussion. The interviewer must answer the question as normally as possible, and immediately turn the question around back to the interviewee. He can answer truthfully, that he has or has not been somewhere or does or doesn't know something about a subject, but immediately follows it up with, but I'm interested in what you did when you were there". Often it will be obvious that the interviewee wants to express his opinion and, in such cases, all that is usually necessary is to ask him what he thinks. This response is particularly useful for topics like politics which are controversial. In these cases, the interviewer can say, "I don't know much about that, what do you think?"

When B thinks a subject is exhausted before the time is up.

Keep calm. Take a deep breath. Talk slowly to fill out the required number of seconds. Don't jump frantically at topics you think might work.

With most people, the interviewer has very little difficulty in keeping the conversation going, if he conscientiously repeats the last phrase and tries to get the person to elaborate his general statements with incidents or examples to explain what he means. He can ask for examples of what happened, ask him to tell about it in more detail, ask him to explain more about what he means -- all of which are ways of saying "Tell me more". If he has heard one example, he can ask for another. Even with the people who cannot elaborate at all, if the interviewer will try several times to rephrase the same general topic, he may be pleasantly surprised to find that the person eventually starts to talk. Of course, if the person cannot talk for any length of time about anything, certainly this is something useful to know.

When the interviewee starts to leave before the interview is over.

In very rare instances, a person may want to leave before the interview is over. Then the interviewer breaks standardization and attempts to explain that he really would like to talk with A longer, and would he please sit down again. This usually occurs in the second period where the interviewee may become impatient when B does not respond.

Smoking during the interview.

Smoking is not allowed during the interview because of the problems it poses in determining the length of A's actions. For this reason, ashtrays should not be available, and the interviewer also will have to observe the no smoking rule. The problem arises because so many people draw on a cigarette when they are at the end of a phrase and may not know quite where to go next, but the interviewer can't tell whether he has really stopped or is going to continue. A person may also puff on a cigarette before responding to the interviewer, and small amounts of delay before answering are considered significant. How is the interviewer to tell whether A has begun his response, or is using the time to stall before making an answer? The worst problem arises in the second period, when smoking is used to ease the tension of not getting a response. What would the person have done if such cigarettes were not available?

Chewing gum or eating during the interview is not allowed because it raises problems in observing the contraction and relaxation of facial muscles which are almost continuous when someone is eating or chewing gum.

When standardization is broken.

When an interview is interrupted by an equipment or power failure, a prolonged coughing fit, or any other unavoidable occurrence, the important thing for B to remember is to try to resume the session as quickly as possible with a minimum of fuss. During the disruption, B should make no attempt to button, but should sit quietly and not converse with the subject any more than necessary. When the interruption has passed, B can resume the session with a remark like "Well now, let's pick up where we left off, you were telling me about (previous topic)". If standardization is broken at any point during the interview, B must remember to note this on the log sheet.

When an interview is "called".

It may sometimes be necessary to end an interview before it has been completed. If the interviewee refuses to interact at all (B administers 10 consecutive prods), is suddenly taken ill, insists upon leaving despite B's efforts to have him cooperate, etc., it will be necessary to cancel the interview and reschedule it at another time. In this event, B presses the "S" button to indicate the end of the session and proceeds as detailed under concluding the interview. There should be no prolonged discussion as to why the interview was called; in most cases A will not be aware that anything out of the ordinary has occurred. B must then indicate what has happened under the heading "Remarks" on the log sheet.

Concluding the Interview

When the time of the interview is up, B does not abruptly indicate that the interview is over, but carries on the conversation for a bit, perhaps more according to his own inclinations, adding an anecdote of his own, or indicating a special interest in something the interviewee has said. After a bit, he can rise and say, "I'm glad to have had this opportunity of talking with you", etc. B does not ask A what he thought of the interview or mention it in any way but, if A asks any questions at this point, they can be answered. A detailed description of the procedure is to be avoided, however. The questions that do arise can be answered in general terms, and this is usually satisfactory.

Procedure and Standards for
the Programmed Interaction Diagnostic Interview

The diagnostic interview is standardized by being divided into 5 periods, each of which has a specified length of time beyond which the period is not intended to last. However, there is an absolute rule that the person being interviewed must not be cut off before he ends an action.

As discussed in the section "The Interviewer as Observer", the cues used by the interviewer to determine A's beginnings and endings are the muscular contractions and relaxations of his face and head muscles (and those involved in gestures if these occur independently of other responses). It must be emphasized that this total response is what is being observed, not the occurrence of speech. Whatever the grammatical structure, e.g., an unfinished sentence, etc., the interviewer is not to deviate from strict attention to the observable response pattern. Therefore, smiles, frowns, head nods are as much part of the interaction pattern as speech.

B's responses in the diagnostic interview are always non-directive (in the sense we have discussed) and 5 seconds in duration. B's tone of voice should be at approximately the same level as A's, not appreciably louder or softer, nor should he emphasize particular words and thus alter their meanings. He must use the same words and types of expression which he hears from A so that, as much as possible, B's choice of words will not suggest differences in background or status. B must further maintain a pleasant, interested facial expression while listening to A or waiting for him to act, but he must be careful not to respond with smiles, head nods, etc., during such intervals. His gaze should be directed at A, not staring, but looking at him. He should not shift his gaze out of A's area by looking obviously away, particularly when A is not acting and B is not supposed to act.

Before the interview begins, B welcomes A with a brief (30-60 second) comment on the rationale of the interview (varying with the particular life situation) and mentions that if A has any questions, B will be glad to discuss them after the interview is over. B also indicates in which chair A is to sit. A topic is selected (in the manner described at the beginning of the previous section) and the interviewer is ready to begin. The mechanical process of interviewing is simple. The interviewer has in front of him a key box on which there are three keys, two of them assigned to the two persons in the interview and the third, the S key, used to indicate that the interviewer is beginning or ending the interview or one of the periods. Of the other two keys, the A key records the interviewee (A's) interaction and the B key that of the interviewer.

When A starts to act, B depresses the A key and holds it down until he sees that A's action has come to an end; at which point, he releases it. Since the measurement is being placed on a magnetic tape which is moving at a uniform speed, the distance that the tape travels when the key is down (during which a tone or frequency is placed on the tape) provides the measure of the length of the action. When the key is up, and A is silent or inactive, the length of time during which there is no tone on A's channel gives the measure of the duration of his inactivity. The same procedure applies to B's key.

Hence, when A's key is down and B's is up, A is talking and B is inactive and vice versa. If B interrupts A, then his key goes down and the length of time that both keys are down is measured. On the other hand, if A stops acting and B doesn't respond, then both keys are up and the length of time that they are in this position gives a measure of the latency. By running this tape through a computer, the length of each interval is measured and it is also assigned to the particular sequence of which it is a part; in other words, the computer distinguishes between the case when A is talking, B interrupts, A gives up and is, therefore dominated by B from the case when A persists, B stops acting, and is thus dominated by A and so on for all the other possible variations.

The following is a diagram of the light box, or signaling device used in conducting an interview:

PERIOD	# A ACT	A BASE	# B-	FULL
00	00	00.0	00	0
TOTAL # A		00.0	# B-	A-
END PERIOD		A ACT	A Before	B+
S		A-		B+
B ACT	B-	A+	Ba After	B+
Ba After Full A-			B+ After	B+

The First Period

Purpose: To get A to interact freely and get over any shyness or other behavior patterns caused by nervousness concerning the interview, so that an estimate can be made of his base level of interaction before stress is administered. Further, the period determines how severe such shyness might be.

Procedure: B begins the period with a five second, non-directive question. The five second duration for B's response is timed by a red "B Act" light which goes on whenever the B key is depressed and remains on for exactly five seconds. As soon as A stops acting, B allows a fraction of a second to pass (during which time the red A- light will be on) to make sure A has really ended. Whenever A stops, B responds for five seconds.

The minimum length of the first period is 15 minutes. If 4 A acts have not been completed at the end of this time, the period continues until 4 acts have been obtained or 45 minutes have passed.

Note: In every period, if A does not respond, B waits 15 seconds and then a "prod" which consists of the usual 5 second, non-directive response is given. If, in any period, 10 consecutive prods are given, the full A- counter will register "10" and the interviewer may terminate the interview.

If A interrupts B at any time during the interview, an A+ light will remain on for whatever length of time both keys are depressed.

The Second Period

Purpose: To determine the percentage of times A takes the initiative when he is given non-response, as well as how quick he is to take it. In addition, to measure the effect of non-response on the duration of A's initiatives, i.e., whether there are significant changes in A's capacity to act at his base level when not obtaining a "supportive" response.

Procedure: When A stops acting in his first unit in the second period, a red B- light goes on. B does not respond, but simply sits with a pleasant expression on his face while looking at A. If A does not take the initiative before 15 seconds have elapsed, the light goes off and B rephrases what A last said with his usual 5 second, non-directive response. If A takes the initiative and acts before the 15 seconds are up, the light goes off as soon as he initiates. B then listens as he usually would, and when A ends his action, B again does not respond. After twelve non-responses, the period is ended and B shifts to the third period.

There is no minimum length for the second period. The period lasts until 12 non-responses have occurred or 45 minutes have passed.

The Third Period

Purpose: To determine whether A returns to the base level seen in the last part of the first period or whether his interaction variables have altered following the stress of no-response.

Procedure: As in the first period, B responds a fraction of a second after A has finished. Each response is non-directive, lasts for 5 seconds and is timed by the B act light.

The third (and fifth) periods last for a minimum of 5 minutes. If fewer than 4 A acts have occurred within this time, the period continues until 4 A acts have been obtained or 15 minutes have passed. In both periods, it is desirable to continue for the 15 minutes if A's actions have not reached the base established in the first period. It sometimes happens that a subject's pattern will indicate severe stress during the 3rd or 5th period. If, for example, a subject with a base of approximately 2 minutes reacts to stress with 8 minute (or ten second) units, the period should be extended for 15 minutes.

The Fourth Period

Purpose: To determine A's persistence in the face of opposition in the form of B's interruptions, the percentage of times that he dominates in comparison to B, and the effects of continuing dominance on his interaction variables.

Procedure: When A begins his first action after B's shift to the 4th period, B waits for approximately 3 seconds as indicated by the "A before B+" signal light and interrupts A with a standard response, making an attempt to respond to what A was starting to say. If A continues to act, B stops at the end of the 5 seconds and A is then allowed to complete his action without interruption. B will then respond to A as usual. Three seconds after A starts a new unit of action, B interrupts with another 5 second response. If A should stop during an interruption before B has finished his 5 second action, B completes his unit, waits for 3 seconds of A's following unit to pass, and interrupts again. This is also the procedure if A should stop and then interrupt before B's 5 second action is completed. There is no minimum length for the fourth period. The period lasts until 12 interruptions have occurred or 45 minutes have passed.

The Fifth Period

Purpose: To determine whether A returns to the base level seen in the last part of the first period or whether his interaction variables have altered following the stress of dominance.

Procedure: As in 3rd period.

These examples of modifications in the Programmed Interaction Diagnostic Interview as treatment programs, have been designed for use upon receipt of a computer analysis of the initial data.

Treatment programs designed to deal with additional variables (extreme shyness, etc.) are available upon request.

DOMINANCE PROGRAM A

When A is highly dominant

(underlined number = length of B response)

1. 1, 4 (4, 10"), 5
2. 1, 4 (6, 10"), 5
3. 1, 4 (8, 15"), 5
4. 1, 4 (12, 15"), 5
5. 1, 4 (12, 10"), 5
6. 1, 4 (12, 5"), 5

KEY:

1 = Standard First Period

4 = Fourth Period

(4, 10") = For all Treatment Programs, the first number within the parenthesis indicates the number of times a particular stress is to be administered - in this case the interviewer will interrupt A four times.

5 = Standard Fifth Period

DOMINANCE PROGRAM B

When A is highly dominant and has a base longer than

2', follow the Dominance Program A with this addition:

If A wins he is allowed to continue without interruption
for one minute, at the end of this time B re-interrupts.

DOMINANCE PROGRAM C

When A has Low Dominance.

1. 1, 4 (4, 5"), 5
2. 1, 4 (6, 5"), 5
3. 1, 4 (8, 8"), 5
4. 1, 4 (8, 10"), 5
5. 1, 4 (10, 8"), 5
6. 2, 4 (12, 3"), 5

Whenever A wins, B's next response is for 10".

Underlined number = length of time A is permitted
to interact without interruption.

NO RESPONSE PROGRAM A

When A has High Initiative

Underlined number = length of B response

1. 1, 2 (4, wait 15" 10"), 3
2. 1, 2 (6, wait 15" 20"), 3
3. 1, 2 (8, wait 20" 20"), 3
4. 1, 2 (10, wait 20" 20"), 3
5. 1, 2 (12, wait 25" 10"), 3
6. 1, 2 (12, wait 15" 5"), 3

NO RESPONSE PROGRAM B

When A has Low Initiative

1. 1, 2 (4, wait 5"), 5
2. 1, 2 (6, wait 5"), 5
3. 1, 2 (8, wait 5"), 5
4. 1, 2 (10, wait 10"), 5
5. 1, 2 (12, wait 10"), 5
6. 1, 2 (12, wait 15"), 5

If A initiates in the second period, B responds immediately and for 10".

NO RESPONSE PROGRAM C

1. 1, 2 (4, wait 15"), 5
2. 1, 2 (6, wait 15"), 5
3. 1, 2 (8, wait 20"), 5
4. 1, 2 (10, wait 20"), 5
5. 1, 2 (12, wait 20"), 5
6. 1, 2 (12, wait 15"), 5

If, in the diagnostic A appears slow to take the initiative - i.e., if he seems about to initiate only as the 15" latency is ended, B follows the above program.

NO RESPONSE PROGRAM D

When A reacts to N.R. with long units in the second or third periods. (units considerably higher than base of first)

1. 1, 2 (2), 3
2. 1, 2 (4), 3
3. 1, 2 (6), 3
4. 1, 2 (8), 3
5. 1, 2 (10), 3
6. 1, 2 (12), 3

In this program N.R. is alternated with immediate response. If A remains reactive (units are still considerably higher than base), third period is extended until his units are approximately the same length as his base.

TABLE I

Basic (Personality) Variables

I. ACTION -- Measure: (duration in .01 minutes)

Comment on extremes of range in base:

A. At one extreme is the individual who responds to almost every question or comment with a long speech, who has boundless energy to express him or herself, and who obviously enjoys talking to other people.

B. At the other extreme is the individual who is almost monosyllabic, who gives brief replies, and with whom it is usually a struggle to obtain adequate responses.

Distribution: Very Low, 40 and below; Low, 100 to 160; Medium, 100 to 160; High, 160 to 220; Very High, 220 and above.

Flexibility--obtained by computing coefficient of variation in base for actions.
Comment:

A. This term refers to the amount of variation an individual shows in the length of his responses. A person may vary considerably, according to the situation in which he finds himself. Sometimes he may be very talkative and have no trouble in speaking at considerable length if he thinks it necessary or desirable, and at other times be a quiet listener and give only brief responses when he thinks them appropriate.

B. Other people show little variation in their responses. They are either always talkative or they are always taciturn. They have little variation in the length of their responses, regardless of what the situation demands.

Distribution: Low, .01 to .25; Medium, .21 to .50; High, .51 to .75; Very High, .76 to 1.00; Extreme, 1.01 and above.

II. INACTION (Silence) -- Measure: (duration in .01 minutes)

Extremes of range--obverse of ACTION.

III. TEMPO -- Measure: (duration in .01 minutes)

Comment: tempo and inaction combine to provide measure of listening ability.

A. Again, at one extreme is the individual who can refrain from talking for relatively long periods of time and who would rather listen than talk himself. He may be low or high in activity but, when his action ends, there is a noticeable interval between it and his next action. Thus, he is able to listen to the speeches of those which whom he comes in contact.

B. The opposite, of course, is the individual who cannot keep still. His periods of silence are brief, sometimes almost imperceptible. Although his actions may or may not be long, they appear so because another speech is started almost as soon as one is finished, so the person appears to be talking constantly, even though it may be in short, quick bursts.

Distribution: computed from deviation from ratio distribution curve: negative value = very low listening ability or fast tempo; positive = high listening ability or slow tempo. Very Low, -.05 and below; Low, -.05 to 0; Medium, 0 to .05; High, .05 to .10; Very High, .10 and above.

IV. HESITANCY (Latency of response by A in .01 minutes)

Comment on extremes of range in base:

A. When another person stops acting, people vary in the speed with which they respond or synchronize their interaction pattern with the other. Those who adjust almost instantaneously, pausing at the most a fraction of a second, are very low in scale, almost having an absence of this trait.

B. Persons who are markedly hesitant consistently fail to respond immediately when their turn in the give and take occurs; in the extreme they wait for long intervals (of many seconds) before they reply.

Distribution: Low, below 1.0; Medium, 1.0 to 2.0; High, 2.0 to 2.5.

V. QUICKNESS (Latency of response of B when A ends in .01 minutes)

Comment on extremes of range in base:

A. Individuals also differ in the speed with which they take the initiative. One type of person may start acting if he thinks something needs to be done or if things are not going as he thinks they should. His reaction is that he should do something about the situation immediately.

B. Another person may wait a long while before taking action, either because someone else may handle the situation or because he may not be sure of the best action to take. Although he may be aware of the need to act, he is not quick to do something himself.

Distribution: Very Fast, below 5.0; Fast, 5.0 to 10.0; Medium, 10.0 to 15.0; Slow, 15.0 to 20.0; Very Slow, 20.0 and above.

VI. INITIATIVE_H (% of times A initiates out of total chances when A was hesitant)

INITIATIVE_Q (% of times A initiates out of total chances when B did not respond)

Comments refer to initiative following quickness in standardized interview:

A. An individual with high initiative is almost constantly starting some kind of action, physical or verbal, after a lull or a period of inactivity. Whenever he is in contact with another person, the chances are great that he began the conversation by going over to the person, telephoning him, or asking him to come to his office.

B. Low initiative is observable in the individual who waits for others to contact him. This person rarely, if ever, volunteers a comment or response if there is a lull in the conversation. He can spend long periods of time by himself without finding any reason to contact others, and he may even put off as long as possible the contacts he is expected to make until someone else finally forces him to start again.

Distribution: Very Low, below 20% to 40%; Medium, 40% to 60%; High, 60% to 80%; Very High, 80% and over.

Initiative Duration (Hesitancy), measured in .01 minutes

This variable, though measured to determine if the durations vary as a function of the durations of Hesitancy, is expressed as a ratio of Action durations where Hesitancy is at a minimum. Its value is essentially in combination with other variables and has not, therefore, been treated separately.

Initiative Duration (Quickness), measured in .01 minutes

A. When someone takes the initiative, finding that the other person is not responding, he may feel the pressure of the non-response and his exercise of quickness, by talking for a much longer time than he normally would under maximum adjustment. It is as if, having the opportunity to take the floor, he cannot give it up.

B. On the other hand, many people, under similar conditions, become shorter and shorter in what they have to say, perhaps reducing the length of their actions to the few seconds that a direct question or comment may last.

Distribution: Very Low, 40 and below; Low, 100 to 160; Medium, 100 to 160; High, 160 to 220; Very High, 220 and above.

OVEREAGER Interval before interruption by A of B, measured in .01 minutes
Comment on extremes of range in base, often termed Overeager:

A. Just as there are many persons who rarely hesitate before responding, so there are many who rarely interrupt or, if they do so, the lack of adjustment during which both people are acting is very brief.

B. On the other hand, the extremely over-eager, often called aggressive, individual consistently interrupts the other person and keeps on acting for long intervals while the other person is trying to hold the floor. They may or may not be able to dominate, but characteristically the stimulus to act is when the other person is already acting.

Distribution: Fast, .01 to 5.0 to 10.0; Slow, 10.0 and above.

Interval before interruption by B of A, measured in .01 minutes.

This variable, being controlled by B, affects A's behavior, but is not a personality variable for A per se; commented on in Dominance, see below.

VII. PERSISTENCE by A when he interrupts, measured in .01 minutes.

PERSISTENCE by A when B interrupts, measured in .01 minutes.

Comment applies to both:

A. High persistence occurs when the individual is able to continue when he encounters opposition--attempts to dominate him--and continues for a significant length of time and, except in extreme cases, is able to win the dominance encounter and take over control of the interaction sequence.

B. Low persistence is found when the individual's interruption of someone else is very brief and becomes shorter and shorter (as if avoiding competition). When interrupted he stops almost immediately.

Distribution: Low, .01 to 3.0; Medium, 3.0 to 9.0 and above.

VIII. DOMINANCE A (% of times A dominates out of total chances when A interrupts)

DOMINANCE B (% of times A dominates out of total chances when B interrupts)

Comment applies to both types:

A. High dominance is characterized by the ability to take control of most interactional situations. A highly dominant person, regardless of interruptions and competition from others, succeeds in "holding the floor" and making his points. He may also interrupt others when they are talking and prevent

individuals of low dominance from expressing themselves.

B. An individual with low dominance is usually overpowered by others with whom he is in contact if there is any competition. He cannot handle interruptions or express himself in the face of opposition. When interrupted, he stops and lets the other person take over and never interrupts another individual.

Distribution: Very Low, below 20%; Low, 20% to 40%; Medium, 40% to 60%; High, 60% to 80%; Very High, over 80%.

TABLE II

TEMPERAMENTAL REACTIONS

Each of these reactions occurs during or after stress and its magnitude is estimated by computing its ratio to the base rate obtained in the period of maximum adjustment after any stress of first meeting has worn off. In those cases where the reaction pattern is one of an increase in action level, by comparison to the base rate, significance is estimated to begin at the value of 1.33. Any positive ratios below this value are not noticeable in validation. Where the individual shows a decrease in values, as in the case of action duration, the value must be below .75 for the ratio to the base for the same reason. For all these factors, the distribution ranges are comparable: for low values, i.e., below 1.00, the ranges are: Low, .75 to .60; Medium, .60 to .45; High, .45 to .30; Very High, .30 and below. For values over 1.00, Low, 1.33 to 1.50; Medium, 1.50 to 2.00; High, 2.00 to 2.50; Very High, 2.50 and above.

It will be noticed in some cases that the temperamental reaction is evidenced by change in a single variable, for example, the marked increase in hesitancy when not getting a response (which is termed being easily discouraged). In some cases, two variables may be involved, e.g., action and silence (inaction) but again are compared to the base. In a few relatively severe reaction patterns exhibited in recovery periods when adjustment by the interviewer or other person is occurring, changes are both by comparison to the base and also, for these patterns, by comparison to the values shown during the stress period itself. (It should be pointed out that most of these patterns, when extreme, help define psychiatric conditions, but rather than go into such detail, it was considered sufficient to describe what the reader would see in every-day, on-going situations, with relatively normal people.)

I. STRESS of FIRST MEETING

A. Reserve or shyness occurs when a person's actions at first meeting are markedly shorter than usual. He does not relax and reach his average base rate until after the contact has lasted for some time. The shorter his actions by comparison to his normal rate and the longer it takes for them to increase, the more acute the reaction.

B. Pretentiousness is a word sometimes applied to a person who markedly overacts at first encounters. His actions are markedly prolonged, (perhaps to "make a good impression"). The longer the actions, and the more time it takes to reach what are base values for him, the more severe the trait.

II. STRESS of NONRESPONSE or of an INADEQUATE RESPONSE

A. When a person finds he is not getting a response, he may begin to act briefly, stop, initiate a short action, and repeat the sequence; that is, he reacts by taking the initiative or by doing something to elicit a response. This kind of person often has difficulty giving long explanations to others and often prefers to do things himself rather than get others to do them.

B. In contrast, another kind of person may go to extra lengths to get a

response. He talks at great length, and when he stops and receives no response, he may pause only briefly before starting again. In extreme reactions, this person may talk rather than act; he frequently talks too much. Habitually, he takes the floor.

C. A third kind of person reacts to the non-response situation by questioning. He is more silent, perhaps wondering or questioning why the other person does not respond or what to do to get a response. This individual takes considerable time before starting action. In the extreme case, his actions are shorter, and he becomes more and more silent.

D. Coincident with one or another of these patterns of reaction to non-response, an individual may also show a marked increase in the degree to which he hesitates before responding, far longer than his normal pattern. This inability to respond when the other person initiates to him is often described as a sign of being easily discouraged.

III. REACTION FOLLOWING a PERIOD of UNRESPONSIVENESS by ANOTHER

A. Instead of returning to his normal base rate when others adjust to him, an impatient person continues to act quickly and speak briefly and tersely after the stress is over. Whenever possible, he tries to withdraw from the situation and avoid further contact with the unresponsive person. The more acute the trait, the shorter his actions and silences.

B. A common pattern appears in the person who has to "blow off steam". Immediately after the stress, he has an unusual burst of speech. He finds it difficult to stop talking about his problems and, in the extreme, is clearly overwrought.

C. Sometimes the individual who is questioning or negative continues in this pattern. Removal of the stress does not alleviate the reaction. The person continues to be withdrawn and brief even though the other person is now reacting to him. This kind of person is described as distrustful or suspicious because he still does not adjust to the previously unresponsive person.

IV. STRESS of MEETING OPPOSITION or COMPETITION

A. Many people when they encounter opposition are easily dominated. When the other person comes in, they stop and give up. But rather than waiting until the other person finishes, they interrupt in turn and thus appear competitive, frequently dominating the other person by cutting him off before he finishes. In the extreme, such people appear combative, matching the other person tit for tat; the longer they are interrupted the longer they interrupt in turn. They are competitive.

B. The defensive individual overreacts when he encounters opposition or even the threat of it. As it continues, he talks substantially longer than his usual level. In the extreme, his actions become so long he appears unyielding or obstinate.

C. The effect of competition on certain people is to inhibit their capacity to respond when their turn comes. The winner who has interrupted and dominated them finally stops and, in the pattern of alternation, they should now act. The opposition they have encountered, however, makes them submissive or passive (non-reactive). They become extremely hesitant, far

more than they ever are in their normal or base condition when they are in a situation in which the other person is adjusting relatively well to them.

V. REACTION AFTER THE STRESS of COMPETITION

A. A person who is considered excitable has difficulty returning to his base level. His actions are only slightly longer than when under stress; he acts too quickly, jumping from one contact to another. In the extreme, such a person is called impulsive. Although he may show a greater recovery, he does not reach his base value.

B. Where the carry-over of the disturbance is not obvious, but the individual cannot talk easily, he is called oversensitive.

C. Still another, after the competition ends, shows marked underreactions. Not only are the actions less than the person's base, but also they are briefer and quicker than under the stress itself. This kind of person appears curt and is commonly considered highly petulant.

D. Bears a grudge. A more severe reaction occurs when silences become very long and actions short, usually with an increase in latencies of response. Such people are hostile and, once the reaction has been triggered off by a particular person, maintain their hostility towards that individual for years.

E. After any opposition, another kind of person may have a long rush of speech that appears to be an attempt to get the other person to respond and agree with him. This reaction is often called self-justification because the person talks at great length around or away from the subject.